a W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

DECEMBER 1960

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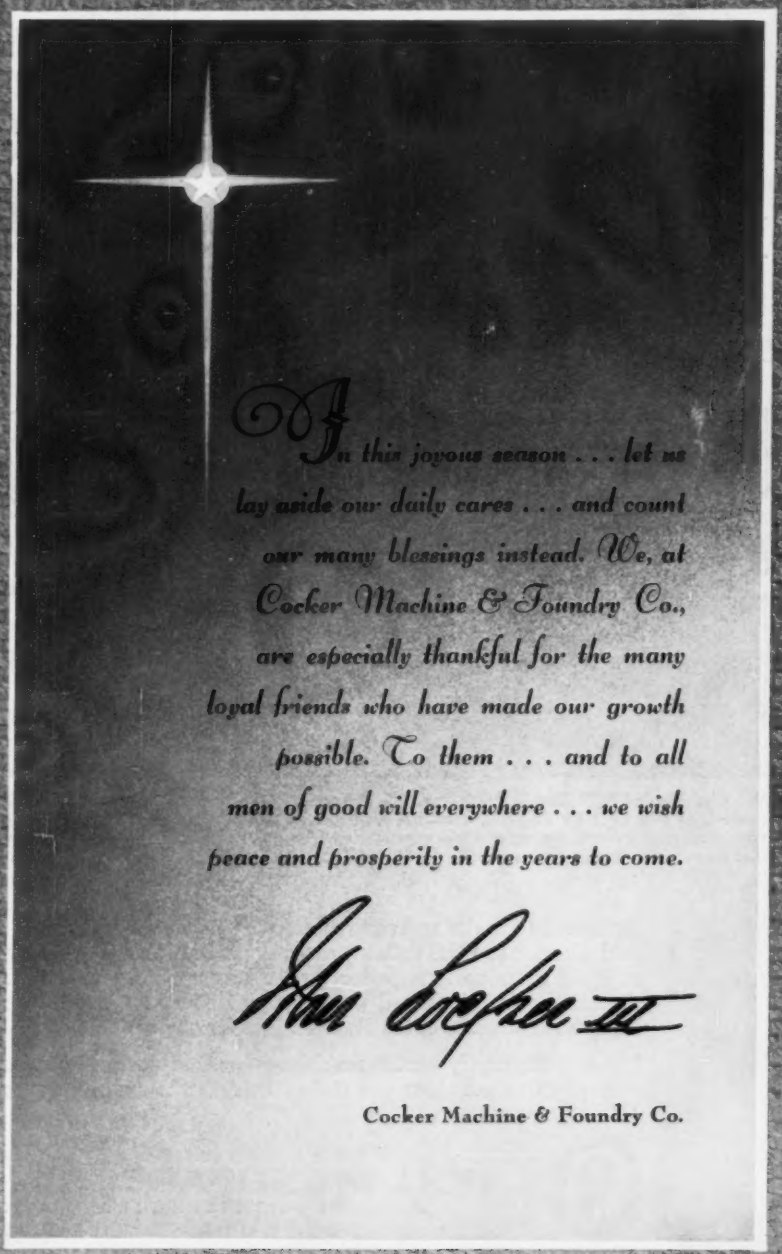
In this joyous season . . . let us lay aside our daily cares . . . and count our many blessings instead. We, at Cocker Machine & Foundry Co., are especially thankful for the many loyal friends who have made our growth possible. To them . . . and to all men of good will everywhere . . . we wish peace and prosperity in the years to come.
John Cocker III
Cocker Machine & Foundry Co.

Want an index of TI for 1960? See page 71

Powered for the dollar-conscious 60's... through know-how as old as this penny

Whitin Model "P" Roving Frame. Its power transmitter, engineered and built by DIEHL, combines high-speed operation with electronic control during start-up acceleration. Air-operated disc clutch is integrally mounted with the DIEHL lint-free motor.

Draper Shuttleless Looms. To assure the smooth, fast starts, high operating speeds, the quietness, low maintenance and compact size that Draper wanted, DIEHL engineers developed a special power transmitter. It combines an inverted type high-inertia motor with a fast, positive clutch-brake mechanism.

Designed to make and save money in this competitive day, these machines by Whitin and Draper are the fastest, most dependable of their respective types. Big factor in making them so is superior power transmitters—*and the* DIEHL *experience behind them*. DIEHL pioneered power transmitters for textile looms, has worked hand-in-hand with builders of textile machines for *seventy-five years*.

When you specify textile machines—or find yourself confronted with drive problems—it pays to consider the dollar behind the penny. It pays to take advantage of DIEHL experience.

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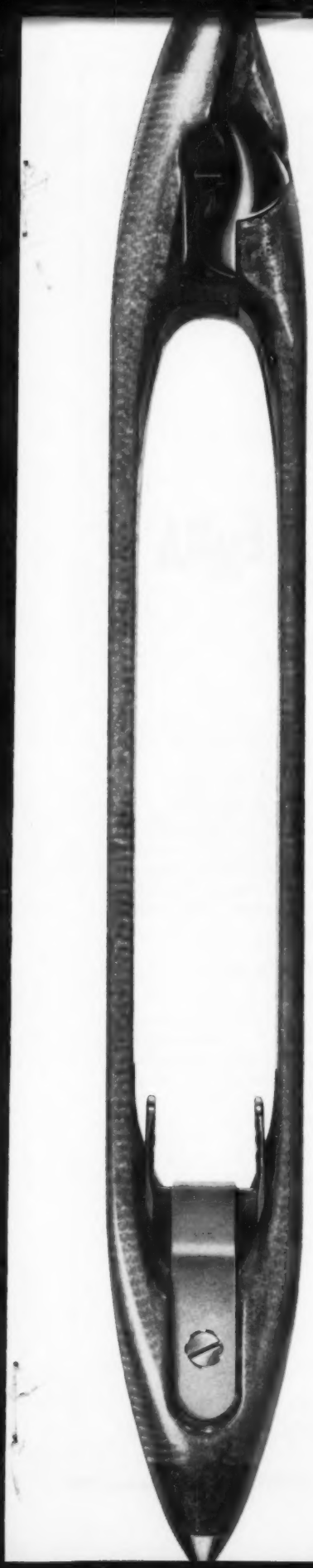

A new record for shuttle life

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We are justly proud that a Draper Tru-Mold Shuttle established this remarkable record.

The use of superior materials and new manufacturing methods make such shuttle life possible.

For better performance, greater shuttle economy, equip your weave room with Draper Tru-Mold Shuttles.

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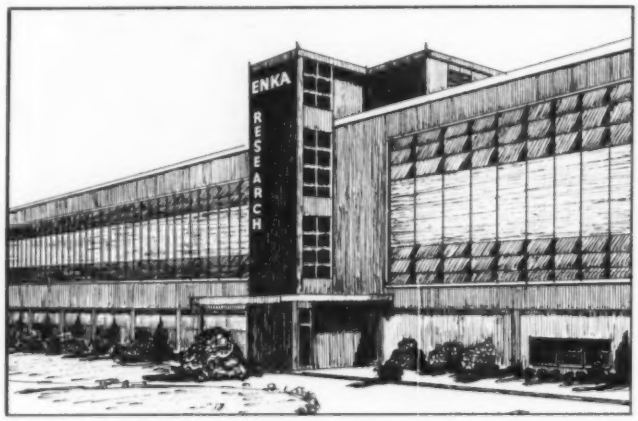

Through successful research... ENKA builds for the future!

WITHIN the walls of the Enka Research Center efforts are continuously directed toward improving Enka's yarns and fibers for a market which demands better and better quality, and developing new yarns to expand Enka's contribution to the textile industry. Through successful research, Enka is building for the future.

Here, quickly, are three major new developments from Enka research – ready to work for you...

NEW ENKA BLANC DE BLANCS™ NYLON

Now, for the first time, a truly white nylon yarn. Another "first" in the polyamid field for American Enka. Blanc de Blancs (white of whites) nylon is created by injecting the whiteness directly into the polymer . . . so that it actually becomes a part of the yarn itself. This yarn has been developed for intimate apparel fabrics and findings marketed in the greige, and for goods in special need of brilliance of white, and for goods that are not normally dyed. There has already been a strong demand for Blanc de Blancs in power net, leno and circular knit foundation garments. Blanc de Blancs nylon deniers currently being offered by Enka are: 40/8, 50/13, 70/32, 100/32, 140/64 and 200/32.

HYDROWARP PIRN for ENKA NYLON

Another step by American Enka to help maintain competitive nylon sales: a new four-pound 13 in. pirn. This new hydrowarp pirn increases net yarn weight per pirn, improves unwinding tensions of the yarn, and reduces operating costs in your mills.

NEW BRIGHT LUSTER STAPLE for ENKA RAYON STAPLE

This new American Enka development has been designed particularly for use in chenille bedspreads, both tufted and woven. In addition to its outstanding processing qualities, this fiber also facilitates the production of chenille bedspreads, exhibiting excellent resilience and bloom.

Whatever your needs in modern yarns and fibers, look to American Enka...for Enka research creates new opportunities for *YOU.*

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American ENKA Corporation, Enka, N.C. • Producer of nylon • rayon • yarns • fibers

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Textile Industries

Formerly "COTTON"

DECEMBER 1960 VOL. 124 NO. 12

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NEXT MONTH

■ TEXTILE INDUSTRIES for January will spotlight the problem of unrealistic maintenance figures—caused by the maintenance department being called on to perform duties, functions, and jobs that can hardly be called "maintenance." An article by the chief engineer at Chatham Mfg. Co. describes how a system of job classifications was found to be a satisfactory way to answer management's questions about the expenditures and activities of the maintenance department.

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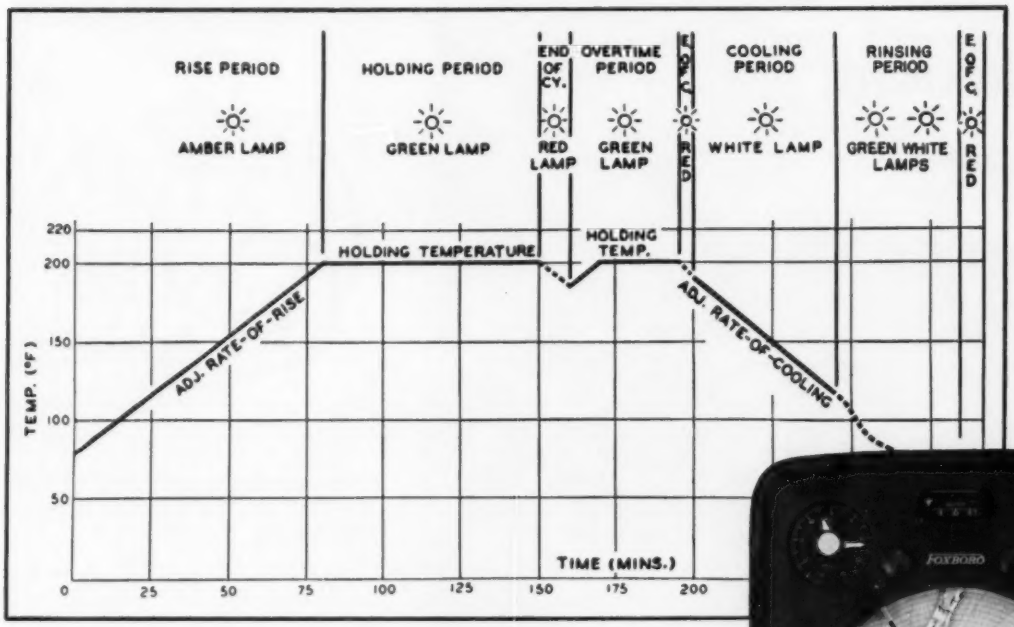

new CycleLog* feature adds automatic rinse to Dye Bath control

In addition to controlled rate-of-rise; controlled holding; controlled cooling—Foxboro CycleLog Controllers now have a new operating exclusive—automatic rinse control for the dye bath kettle.

Here's how it works. The operator sets the CycleLog timer, for the desired rinsing time, when he starts the cooling cycle. The CycleLog does the rest: at the end of controlled cooling, rinsing starts *automatically*—a rinse signal is given, the rinse valve opens to flush away spent dyestuffs and chemicals. Valve closes and end-of-cycle light signals when timer runs out.

It's simple—it's automatic. And you can specify it on any new Foxboro CycleLog Controller, or have your existing CycleLogs modified to include it. For full details on automatic rinse control, and a variety of other CycleLog dye bath control functions, write The Foxboro Company, 4812 Neponset Ave., Foxboro, Mass.

*Reg. U.S. Pat. Off.

CycleLog instruments for Dye Bath Control

Model 40 C-H
controlled heating-holding
Model 40 C-HC
controlled heating-holding-cooling
Model 40 C-HR
controlled heating-holding-rinsing
Model 40 C-HCR
controlled heating-holding-cooling-rinsing

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FIXTURES

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The best solution to costly mistakes is to eliminate the circumstances which make them possible. Macbeth Color Matching SKYLIGHT and EXAMOLITE Fixtures can help eliminate color matching errors, assure better in-plant control because they give you:

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(3) A means of letting the night shift see color as well as the day.
(4) A tool which will pay for itself in more uniform color.

For complete literature, fill out the coupon below.

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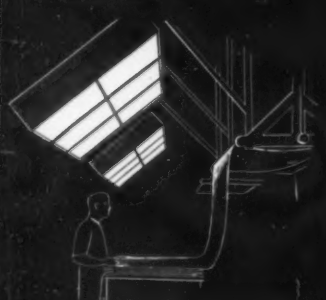

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SHORTS & REMNANTS

Christmas Gift Suggestions

If you're late again this year in taking care of Christmas gifts for wife, family, friends, and customers, maybe we can help. Let us quote from the Christmas catalog of Neiman-Marcus, Dallas, Texas:

"THE N-M TOUCH: HIS AND HER AIRPLANES

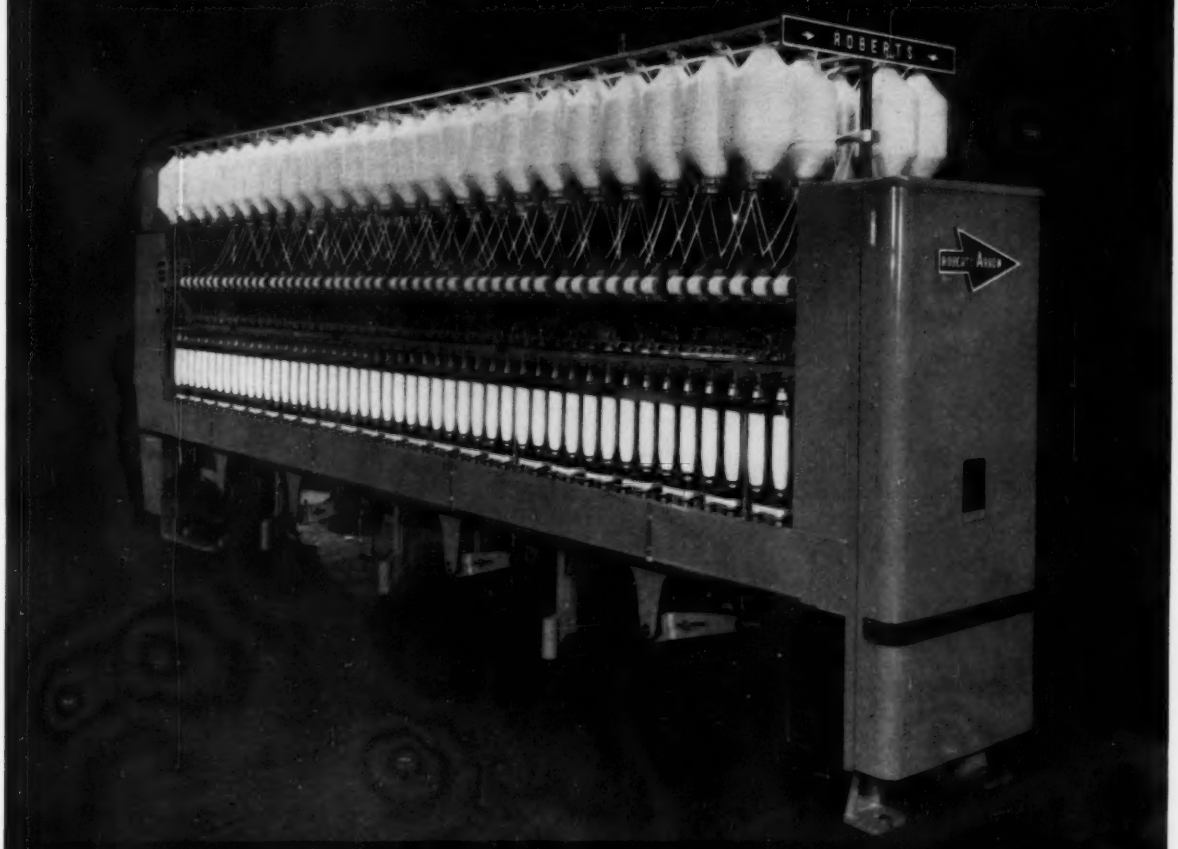
"Have you a husband or wife who's utterly impossible to buy for? Here's the one great they'll-never-believe-it Christmas gift you've searched the world to find! His is the incomparable, big 7-place Beechcraft Super G18. Hers is the 4-place Beechcraft Bonanza. Both speed along the skyways at more than three-miles-a-minute, both can be bought in your choice of color, style, cabin arrangement, and any number of combinations of individual navigational equipment. Hers, $27,000. His, $149,-000. Both are 'Fly Away Factory' prices. Her jacket adds the right dash in Russian white ermine with a bleached white fox border. $2,-975.00 incl. Federal tax."

If that's not *quite* what you wanted, N-M will sell you a silver thimble for $2.50. Or a nutmeg grater (with two nutmegs) for $8.95.

Clearing a Mix-Up

On page 1-74 of our Mid-September 1960 Buyer's Guide we described the Saurer 100W terry loom, equipped with the Huttwil name-weaving head which requires only a simple shifting of electrodes in a console to get the desired patterning (you probably saw it at the Amer-

ROBERTS ARROW SPINNING



Versatility For All Yarn Counts !

Arrow Spinning Frames are available to run all yarn counts from 2's to 120's. More than 1000 Arrow Frames are in service at large and small mill organizations in the U. S. A.

Several examples are provided at the right which demonstrate the versatility of Arrow Spinning.

The newly refined Arrow offers greatest value in high speed operation, bigger packages, dependable performance, low initial cost, and maintenance-free operation. Arrow Spinning is available for both cotton and worsted systems.

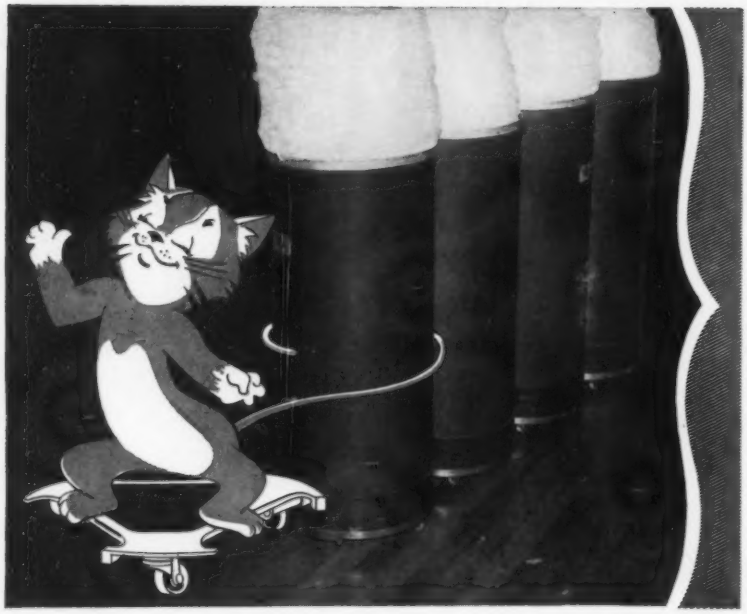
Roberts Technical Service backs up every Roberts installation with intelligent understanding of the mill's requirements and ambitions.

THREE MILLS RUNNING ARROW FRAMES ON A WIDE RANGE OF YARN NUMBERS

- An independent producer of Osnaburgs and Corduroys runs 62 Arrow Frames with 20,000 spindles making 3.25's to 8.25's warp spun filling yarn on 3" rings and 12" bobbins; 8's to 21's warp yarn on 3" and 2½" rings and 12" bobbins; and 14.5's to 22.5's direct spun filling yarn on 1-9/16" rings and 8¾" quills.
- A major mill group uses 50 Arrow Frames with 16,000 spindles to produce 80's to 100's combed long fiber cotton yarn for fine broadcloths on 1¾" rings and 10" bobbins.
- A small carded knitting yarn mill uses 20 Arrow Frames with 5040 spindles to run 26's yarn on 2¼" rings and 11" bobbins.

ROBERTS COMPANY

SANFORD, NORTH CAROLINA



SOUTHERN STATES LARGE COILERS AVAILABLE WITH NEW ALLEY-SKAT TO SPEED DOFFING AND CONVEYING

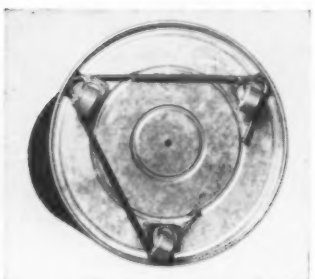
Large-size Southern States Coilers are now available with ALLEY-SKAT, the simplest, most economical can conveyor system ever developed. The problem of doffing and moving heavier cans may now be solved with a low capital outlay.

For example, suppose you are equipping your mill with large Southern States Coilers: if you decide to employ ALLEY-SKATS, you can specify that special cantable adapter plates be included at no extra cost. The only additional charge is for the can latches and ALLEY-SKAT dollies, which are available at nominal cost.

The latches and dollies are easily and quickly installed on any standard can.

The ALLEY-SKAT is strictly optional equipment. However, if you are concerned with handling large cans, as most mill men are, we suggest that you investigate the ALLEY-SKAT.

Get full information from your Southern States representative or write for Bulletin 501.



ALLEY-SKAT Dolly mounts to inside of can rim. Dollies are made of finest materials, including heavy-duty mill-type casters.

Cantable adapter plate is available as standard equipment on Southern States Coilers at no extra charge.

Doffing of large, tightly packed cans is quickly and easily accomplished. No lifting required.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

SHORTS & REMNANTS

(from page 6)

ican Textile Machinery Exhibition earlier this year). We indicated that this set-up is available from Saentis, Inc., of Union City, N. J.

Well, the loom *is* available from Saentis, but the name-weaving equipment, manufactured in Switzerland by Textile Apparatus Factory Ltd., and called the Texap Electric Jacquard, is sold in the U.S. by The Baxter Corp., P. O. Box 1160, Paterson, N. J. So if you're interested in complete details about this new development, get in touch with **Irving S. Baxter,** president of The Baxter Corp., and he'll be glad to see that you receive the whole story of how it can fit into your operation.

TI Heads South

As you probably know, TI has a Latin American edition, which until recently was published in Mexico City. Well, we have now moved shop to San José, Costa Rica, and changed the name of the magazine to TEXTILE INDUSTRIES EN ESPANOL. Here's a picture of where it's being printed:

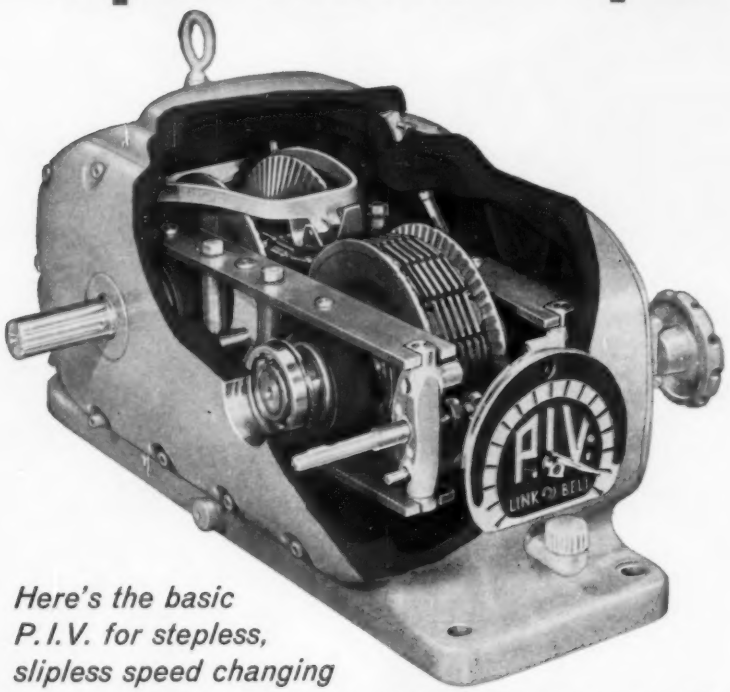
If you look closely, you can see the author of this here column stepping off the curb. As the sign says, our printer also runs a bookshop ("Libreria"). Incidentally, for those who like a uniform climate, we recommend San José: Record high there is 78°; record low is 64°. It's very dry, and the weather is the same all year round.

Latin American readers (or anyone else, for that matter) who would like a sample copy of TI en Espanol can drop us a line, or write to our manager down there: Frank J. Thomas, Apartado 2988, San José, Costa Rica.

Continued on page 12

LINK-BELT P.I.V. is available in all these ways for

super-sensitive quality control



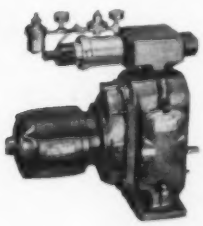
Here's the basic P.I.V. for stepless, slipless speed changing

Today a growing number of production machines and operations demand extremely accurate transmission of power with variable speed control. For these requirements, Link-Belt P.I.V. is available in the many ways shown below—with automatic controls and integral differential to satisfy an infinite number of variable speed applications.

Variable from top speed to minimum speed with no steps, no stops in between, Link-Belt P.I.V. is industry's only chain-driven variable speed drive. Teeth—not tension—permit positive, high-efficiency power transmission.

For information on the full P.I.V. line, call your nearest Link-Belt office or authorized stock-carrying distributor. Or write for Book 2274 on basic P.I.V., and Book 2774 explaining P.I.V. with integral differential.

Link-Belt P.I.V. is available in 8 sizes and 16 standard types, in capacities from ½ to 25 hp—for horizontal or vertical mounting. Compact design simplifies installation as a separate unit or a built-in part of a machine. P.I.V. is totally enclosed, automatically lubricated.



PNEUMATIC (shown) — The P.I.V. pneumatic ratio changer is used as a final control element providing fully automatic control of speed. Operates from standard pneumatic controller in systems regulating pressure, temperature, rate of flow, etc.

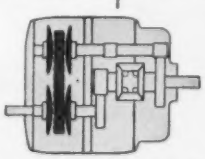
MECHANICAL — Predetermined timing, cyclic, or characterized regulation can be accomplished by P.I.V. with mechanical controls.

HYDRAULIC (shown) — Consists of a low-pressure hydraulic Servo system with a precision valve positioner. Intended to give automatic speed control by direct operation with any form of linkage. A minimum operating force is required.

ELECTRONIC — Flexible form of speed control to provide either "on-off" or modulated speed response of P.I.V. drive. Electric control motors are available to match a wide variety of electrical control systems.

P.I.V. with integral differential gearing

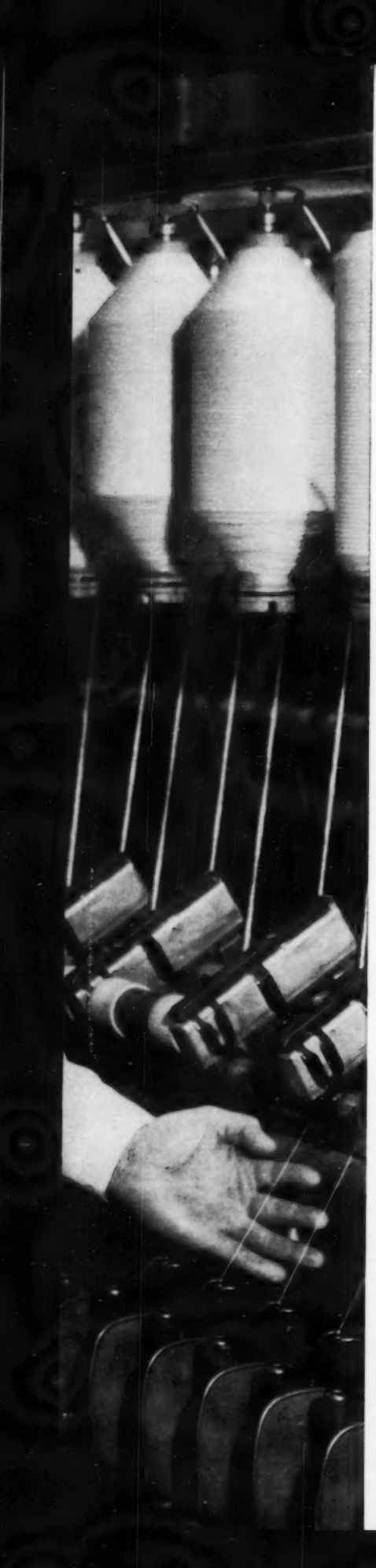
CONDENSED SPEED RANGE TYPE of integral differential results in a ratio range less than a standard P.I.V. with the advantage of increased horsepower capacity, high ratio stability and accuracy. These drives are applicable wherever small ratio range is required but with extreme accuracy of ratio control.



EXTENDED SPEED RANGE TYPE of integral differential results in infinite ratio range and output speeds down to zero with a constant input speed. Clockwise and counterclockwise rotation through zero is also obtainable. These drives may be used whenever a ratio range greater than 6 to 1 is required.

LINK-BELT P.I.V. VARIABLE SPEED DRIVES

LINK-BELT COMPANY: Executive Offices, Prudential Plaza, Chicago 1. To Serve Industry There Are Link-Belt Plants, Warehouses, District Sales Offices and Stock Carrying Distributors in All Principal Cities. Export Office, New York 7; Australia, Marrickville (Sydney); Brazil, Sao Paulo; Canada, Scarboro (Toronto 13); South Africa, Springs. Representatives Throughout the World.



Mr. A. M. Federline, Overseer
of Spinning at Startex Mills, Startex, S. C.,
discusses yarn quality with
Armstrong representative Paul Rosser.

Your Armstrong man can help you select the right Accotex Cot for top production of quality yarns

As every mill man knows, each fiber and blend presents different problems in spinning—problems that can vary on different drafting systems. As a result, there can be no one cot material that will work equally well on every combination of frame and fiber. That makes the selection of the right cot important to your getting maximum production of quality yarn.

The training and wide experience of your Armstrong man can be helpful in picking the right spinning cot for your specific mill conditions. He can make dependable recommendations based on the wide range of materials available in the Accotex line.

For example, if your lap-up rate is increasing, new Accotex anti-static cots may give you the help you need. Where eyebrowing is a problem on spinning and roving frames with flat clearers, a switch to Accotex NC-762 Cots will help to eliminate it.

On some drafting systems, a softer cot material has been found to improve break strength and reduce yarn irregularities. Accotex Cots made of softer compounds are available to meet this need.

On any frame . . . with any fiber or blend . . . Accotex Cots will help you get maximum production of quality yarn. Your Armstrong man will be glad to help you select the right roll cover for best performance on your frames. Call him or write to Armstrong Cork Company, Industrial Division, 6512 Ivy Street, Lancaster, Pennsylvania.

Armstrong ACCOTEX COTS

. . . used wherever performance counts

NEW D & F Model "H" (Lower and Narrower) SPINNING FRAME

. . . lets you choose your own frame specifications for:

Controlled, improved spinning

Better yarn quality

Higher production output

Lower unit costs

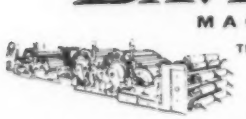
DAVIS & FURBER

lets you choose the features you need. There are 51 in all. 30 are entirely new.

- ☐ Increased package size
- ☐ Reduced floor space (15% approx.)
- ☐ Variable speed drive
- ☐ Automatic needle injection-type spinning rings
- ☐ Ballooning rings
- ☐ Ring size up to 6"
- ☐ Gauge size up to 7½"

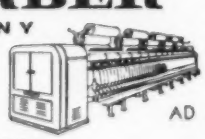
Check the items of interest. Tear out advertisement and mail to us at once. Call us, or simply get in touch with your own Davis & Furber man. Send for new Model H Spinning Frame folder. Find out what "COORDINATED PRODUCTION" can mean to you.

DAVIS & FURBER
MACHINE COMPANY



TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS

North Andover, Mass.
Charlotte, North Carolina



AD 15-1

Member — American Textile Machinery Association

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

SHORTS & REMNANTS

(from page 8)

Distinguished Visitor

Speaking of our Latin American edition reminds us that we had a distinguished visitor from Latin America drop by our Atlanta office the other day:

That's **J. T. Baines, F.T.I.,** who is general works manager of Sao Paulo Alpargatas S.A., Sao Paulo, Brazil. Mr. Baines is an occasional contributor to our "How Others Manage" department, and while he was here gave us some interesting sidelights on running a textile mill in South America.

Calendar for PA's

This is the time of the year when suppliers send out calendars; here's a special one for purchasing agents:

ALLEN COMPANY, INC.
NEW BEDFORD MASS.

RUSH ORDER CALENDAR

SPECIAL CALENDAR FOR PURCHASE OF ALL SUPPLIES AND BEAMS ON AN EMERGENCY BASIS. DOES AWAY WITH REGULAR DELIVERY!

Everyone wants his order yesterday. With this calendar you can place your order on the Seventh and have it delivered on the Third.

To have your order shipped by Friday, two Fridays in every week appear in this calendar.

There are seven extra days at the end of the month to take care of deliveries which MUST be made before the first of the following month.

You have no first of the month bills to pay because there isn't any "first". Omitted is the "tenth" and "twenty-fifth" so that you won't have to pay out invoices in accordance with distributor terms.

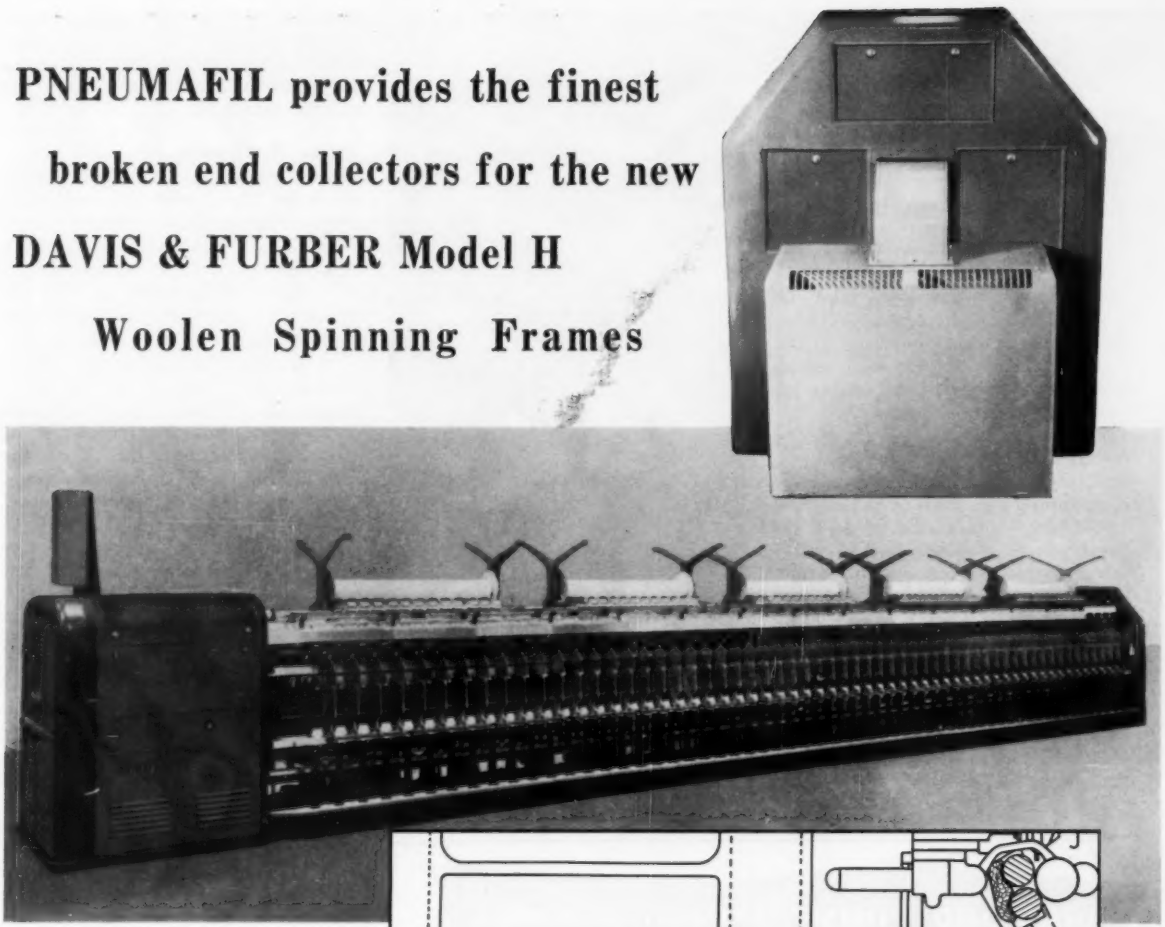
There are no bothersome non-productive Saturdays and Sundays. In that way, your distributor can get out your rush orders requiring week-end production without the time-and-a-half or double-time overtime charges.

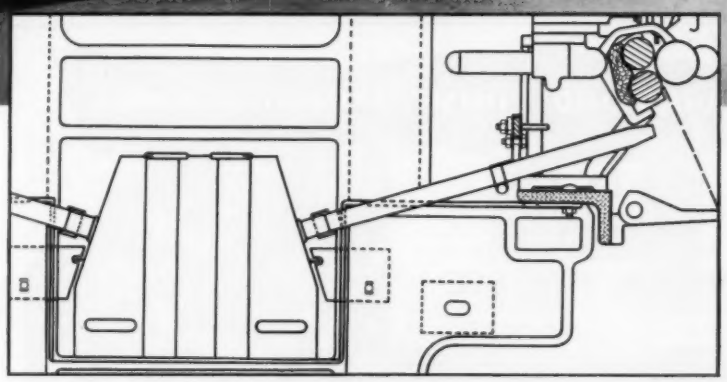
There's a new day each week called Negotiation Day, on which requests for improved delivery can be reviewed and discussed once weekly with your supplier representative.

NEG	FRI	FRI	THU	WED	TUES	MON
8	7	6	5	4	3	2
16	15	14	13	12	11	9
23	22	21	20	19	18	17
31	30	29	28	27	26	24
38	37	36	35	34	33	32

► We note in one of the Charlotte, N. C., newspapers that **Bill Terrell,** president of The Terrell Machine Co., Inc., recently won the Southern Seniors golf tournament "in a breeze," as the newspaper put it. Bill chalked up a one-under-par 69 for the first round of the 54-hole

PNEUMAFIL provides the finest broken end collectors for the new DAVIS & FURBER Model H Woolen Spinning Frames





Illustrated is a cross section of frame showing location of Pneumafil header duct and suction tubes.

Faster front roll speeds are possible on the new Davis & Furber Model H Woolen Ring Spinning Frame because of superior suction cleaning equipment designed specifically for this frame by Pneumafil Corporation. This new spinning frame fully utilizes the advantages of efficient suction cleaning — recognized as essential in today's modern woolen mill.

Pneumafil suction equipment is specially engineered to give the highest economical air quantity and the most balanced conditions throughout the room. More air for more effective cleaning means ends down are reduced, frames are kept cleaner, and production is increased.

PNEUMAFIL®

PNEUMAFIL CORPORATION, CHARLOTTE 8, N. C.

UNIT SYSTEM • CENTRAL AIR HANDLING • CENTRAL MATERIALS RECOVERY • LINT FREE CREEL • PNEUMASTOP • PNEUMAKOOL • PNEUMACLEAR • PNEUMACARD

SHORTS & REMNANTS

(from page 12)

tournament, and 71's in the second and third rounds, to wind up eight strokes ahead of the runner-up. Bill says that he's playing the best golf of his life at the age of 53.

► We recently received a news release from a chemical company, describing how it was going into the business of making disposable paper clothing, to replace the usual fabric garments. Funny thing, too, the firm is a large supplier to the textile industry.

Family Affair

"I, my friends and relations have keen interest in your periodical and would like to subscribe it. So I request you to send me free 35 thirty specimen copies of your journal. Kindly treat it most urgent and send the required material at an early date."

S. C. ZAMINDAR

Budaun, India

1st Shovelful Dept., Brick Section

Pursuing our hobby of collecting first-shovelful photos, we recently came across this brick-laying picture:

That's James P. Kyte, president of Soabar Co., who according to the caption that came with the picture "mans the trowel for brick-laying ceremonies." Well, if you'll look at the position of that brick he's laying, you'll understand why we hope he called for a bricklayer before the mortar hardened.

TI Got Wet Bottom

"Unfortunately [TEXTILE INDUSTRIES for September] got wet on the bottom during its way to Argentina. Besides its messy look that makes it impossible to include in my library, it makes it very hard to read because the pages are like glued together and torn.

"I would appreciate it very much if you would send me another magazine so that I may also be included in the treat that TEXTILE INDUSTRIES gave its readers in the September issue."

SAMUEL EPSTEIN

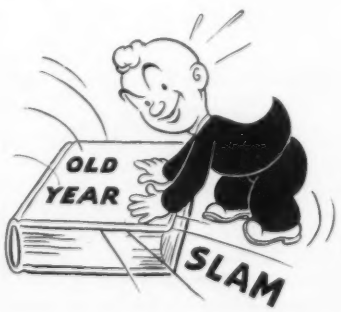
Buenos Aires, Argentina

We wouldn't want a reader to like miss a treat, so we sent another copy right away.

More Information

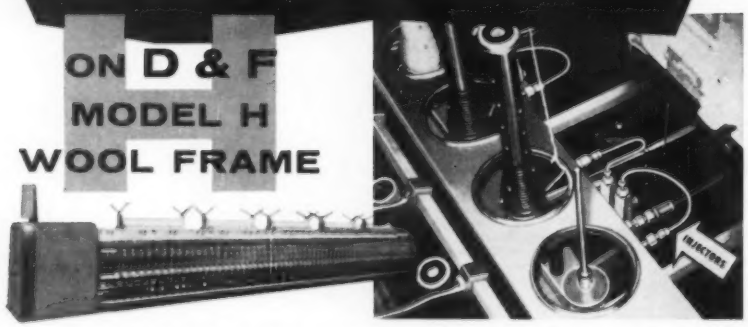
Each month **J. B. Goldberg** helps keep you up-to-date on technical and commercial developments in the industry (see page 59 this month). Mr. Goldberg is always ready to give further information on items mentioned in his column; some of those who recently took advantage of this offer include **H. R. Lester, Jr.,** Pepperell Mfg. Co., Lindale, Ga.; **David H. Fields,** dir. of res., American Thread Co., Willimantic, Conn.; Promaco, Mulhouse, France; **A. L. Tait,** pres., Tait Yarn Co., Inc., Lincolnton, N. C.; **W. G. Abbott, Jr.,** consultant, Wilton, N. H.; **R. J. Schoenberger,** PA, The Chemstrand Corp., Pensacola, Fla.; **Sidney Brawer,** v-p, Empire Piece Dye & Fin. Co., Paterson, N. J.; **Erwin A. Wuester,** Coats & Clark, Inc., NYC; **J. G. Neighbor,** Handcraft Co., Inc., Princeton, Wis.; and **R. L. Yount,** Newton (N. C.) Glove Mfg. Co.

► So a very merry Christmas to you, and we'll see you again next month, when TI will appear with a New Look and some other significant changes.



DIAMOND FINISH SPINNING RINGS

ON D & F
MODEL H
WOOL FRAME



provide automatic lubrication from centralized pressure system

To assure delivery of lubricant with precise timing and in amounts which can be metered to .0002 oz. . . . Davis & Furber takes advantage of the demonstrated ability of DIAMOND FINISH rings to give precision results.

WHITINSVILLE SPINNING RING CO.
Makers of Spinning and Twister Rings since 1873
Whitinsville, Mass.

FEATURES OF THE NEW "DW" WARPER

CAPACITY. The "DW" Super-Speed Warper will wind beams up to 40" head diameter. All types of beams up to this size can be accommodated.

LET-OFF MECHANISM. In order to insure uniform pressure on the driving drum as the beam builds up, a new let-off mechanism has been developed. This permits extremely accurate automatic gaging and maintenance of pressure, and consequent uniformity of the beam.

DOFFING. A power-operated built-in doffing mechanism helps to reduce down time to a minimum and saves effort substantially. Sturdy arms, which support the beam, pivot outward to set the beam on floor or truck as desired.

PUT A NEW "DW" WARPER
IN FRONT OF YOUR PRESENT
"VC" CREEL

It is perfectly possible to do this, and the added advantages of lower cost and greater productivity can make the investment a profitable one. Gains come in several ways — larger beams can be wound, the beams are of greater uniformity throughout, and doffing is much easier. The new "DW" Super-Speed Warper is a little deeper from front to back, since the driving drum, clutch, brake, and motor are now arranged back of, rather than underneath, the beam. With this re-arrangement, valuable improvements have been made in many important elements of the drive and controls. We suggest you discuss the possibilities for *your* mill with your Barber-Colman representative at the next opportunity.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

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Batliboi & Company Forbes Street, Fort Bombay, India	J. Rabasa Isabel la Catolica 45-913 Apartado 7348 Mexico D.F., Mexico	Industria e Comercio de Maquinas S. A. "COMASA" R. Glicerio, 537/547 Sao Paulo, Brazil	Do-Yei Shoji Kabushiki Kaisha Atlas Building (7th Floor) 11, Bingo-Machi, 3-Chome, Higashi-Ku Osaka, Japan	Associated Agencies (M'cr.) Ltd. Piccadilly House 11 Piccadilly Manchester 1, England	Associated Agencies (M'cr) Ltd. 730, Muhammadi House McLeod Road Karachi 2, Pakistan

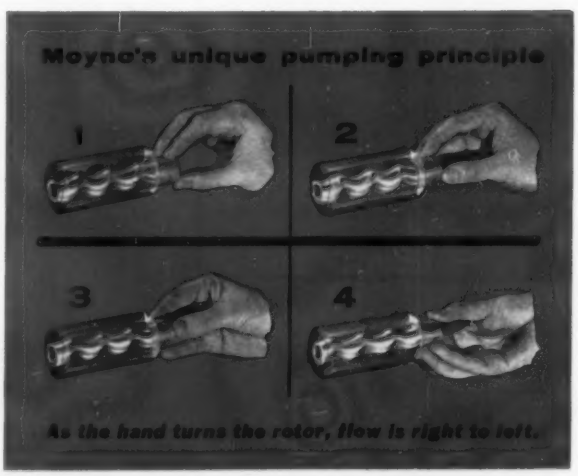
MOYNO®
TEXTILE PUMPS

MOYNOS® Pump Highly Viscous and Corrosive Textile Liquids *Without Excessive Wear!*

MOYNOS pump any textile liquid that can be forced through a pipe! They handle highly viscous materials—thickeners, starch size and non-pourable pastes economically. They pump corrosive liquids—acid solutions, dye and chlorine—without appreciable pump wear. MOYNO can satisfactorily handle caustic alkali solutions and not cause foaming or aerating. In many textile mills, MOYNOS have cut downtime drastically on mercerizing and sizing machines when they replaced rotary pumps which wore quickly and lost capacity and suction characteristics.

This remarkable ability to pump textile troublemakers is explained by MOYNO'S exclusive *"progressing cavity"* principle. As shown at right and in the cutaway model above, a screw-like rotor revolves in a double-threaded stator to form progressing cavities which move all fluids smoothly and evenly through the pump. Corrosion is no problem because both rotor and stator can be made of special resistant materials.

MOYNOS are available in capacities up to 500 gpm; pressures up to 1000 psi. Off-the-shelf replacement parts are always immediately available. For details on how MOYNOS can undoubtedly cut costs and improve liquid handling in your plant, write today for Bulletin 30-TI.



ROBBINS & MYERS, INC.

motors, household fans, Propellair industrial fans, hoists, Moyno industrial pumps

SPRINGFIELD, OHIO • BRANTFORD, ONTARIO

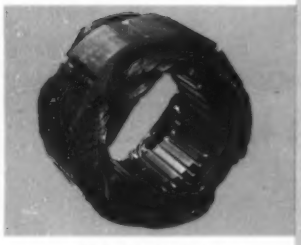
A NEW Duty Master FHP.

for heavy-duty industrial use

RELIANCE ELECTRIC AND ENGINEERING COMPANY

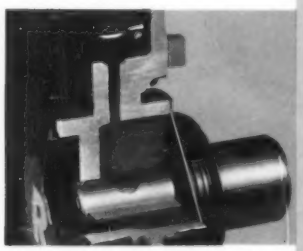
MASTER ELECTRIC COMPANY DIVISION

A NEW Duty Master FHP.

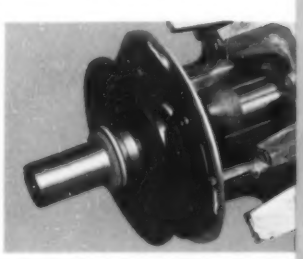


PROTECTED STATOR

TERMINAL BOARD



SLEEVE BEARING



CENTRIFUGAL CUT-OUT

TOUGH...COMPACT...COOL!

A motor that combines new, most-wanted features at no extra cost

Duty Master:

This motor is tough all over . . . deliberately designed for heavy industrial duty. Frame is rolled from steel—end shields cast from an aluminum alloy specifically selected for strength. Ball bearings are double-shielded, with lubricant packed into the bearing for life. Sleeve bearings are steel-backed and babbitt-lined for low friction and long wear. "Permawick" oil retaining material provides maximum lubrication to these bearings. Rotor is pressure-cast from high purity, low-resistance aluminum. Varnish impregnated stator resists moisture . . . and adds strength to windings.

Duty Master:

More power per pound . . . simple installation, 33% lighter than other preceding motor designs. Good design and materials make the difference. Makers of motor-driven products save on shipping and handling costs. Duty Master's light weight and small size make possible lighter, less complex mounting on equipment. Terminal board provides easy power connection in the front end shield. Cover plate quickly removable. Motor rotation easily reversed by interchanging slip-on connections.

Duty Master:

Up to 10% cooler than other comparably rated motors . . . yet gives you maximum protection. High load capacity results from new, effective ventilation of critical heat sources. Laminations, coils and rotor are literally rinsed with cooling air through new end shield design. In totally-enclosed, non-ventilated motors, the fan, cast integrally with rotor, circulates the air within the motor at a rate appropriate to efficient transfer of heat to motor frame and end shield. And load carrying capacity of the totally-enclosed fan-cooled motor is increased by a fan and shroud directing air over the frame and end shield.

Duty Master:

Quiet . . . Smooth . . . Positive. Resilient mounting composed of metal-rimmed, rubber-cushioning rings that encircle the bearing hubs on each end and support the motor. Motor can be mounted in any position. Single phase starter winding circuit automatically opens at 80% of full load speed. Action is quiet and positive.

Available now in 48 and 56 frame sizes, from conveniently located stocks. Duty Master FHP. is made in ⅛, ⅙, ¼, ⅓, ½ and ¾ hp. capacitor-start, split-phase and polyphase for 48 and 56 frames; repulsion-start induction-run in 56 frame. Your Reliance Sales Engineer or Distributor has all the facts at his finger tips. Call him or write for Bulletin B-2514. It will be sent to you promptly. B-1011

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Product of the combined resources of Reliance Electric and Engineering Company and its Master and Reeves Divisions

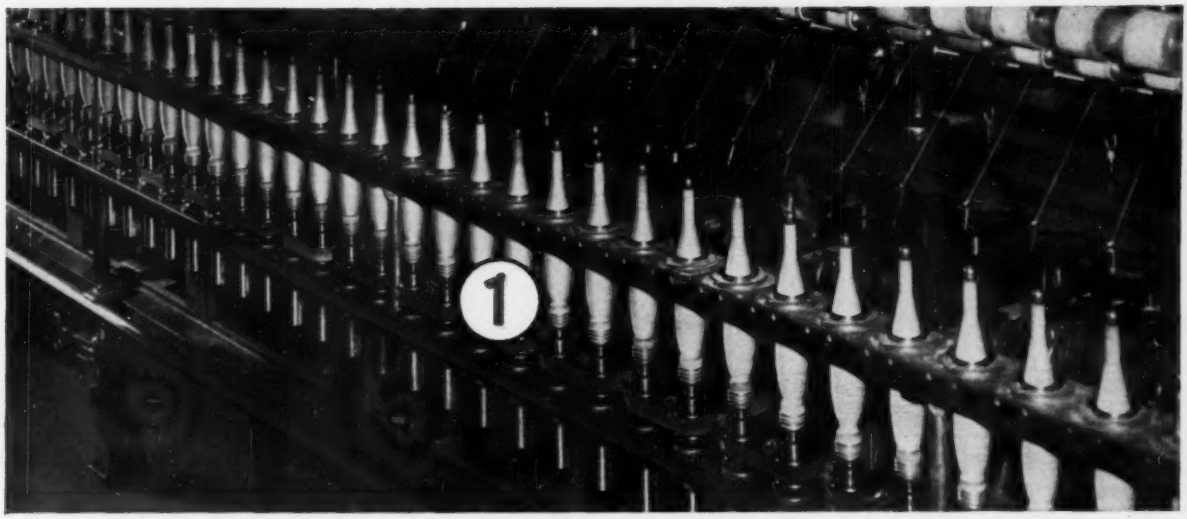
RELIANCE ELECTRIC AND ENGINEERING CO.

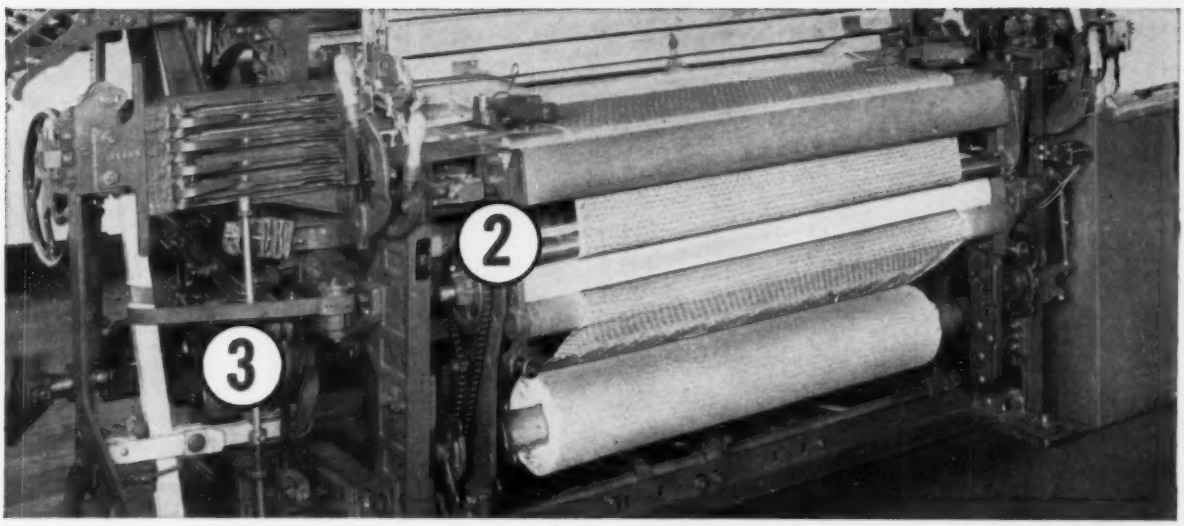
CLEVELAND 17, OHIO

Canadian Division Toronto, Ontario

Sales Offices and Distributors in principal cities

Duty Master A-c. Motors, Master Gearmotors, Reeves Drives, V★S Drives, Super 'T' D-c. Motors, Generators, Controls and Engineered Drive Systems.





ESSO LUBES STAY ON THE JOB

1. Spinesso® spindle oil stays put on bearing surfaces . . . minimizes startup and running friction and dampens vibration. Outstanding oxidation and color stability. Checks corrosion in humid atmospheres. Time-proven Spinesso does a fine job, too, in oil-lubricated twister and spinning rings. For grease-lubricated twister rings, Alert® adhesive white grease is recommended.

2. Nebula® EP multi-purpose grease replaces many greases . . . light to heavy! Excellent for loom gears and bearings. Outstanding in the hot, highly loaded bearings of size, dryer and calender rolls. Lubricates well under wet conditions, as found in mercerizing and scouring range bearings.

3. Millcot® anti-spatter oils stick well to rapidly moving parts and help keep down oil stains. Anti-wear agent maintains lubrication under heavy pressure and shock loading in looms. Millcot K prevents excessive leakage in older card comb boxes and spur gear cases. Millcot DX doesn't form oil "strings" and is readily scoured from fibers... an ideal lube for top roll bearings.

Efficient Esso lubricants save time, labor and machine wear. For more information contact your local Esso office, or write: Esso Standard, Division of Humble Oil & Refining Company, 15 West 51st Street, New York 19, New York.

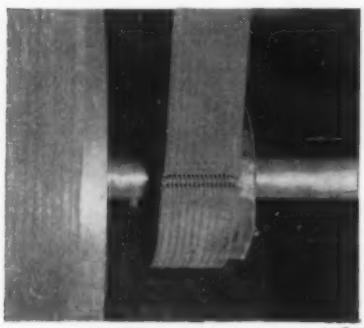
Esso

In Industry after Industry..."ESSO RESEARCH works wonders with oil"

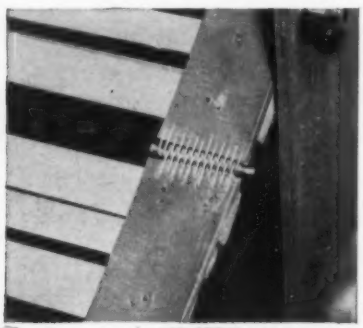
"ENDLESS APRONS ARE HARD TO INSTALL"

says E. M. HYDE, Project Engineer at Proctor & Schwartz, Inc.

A complete batt making line used in the manufacture of cotton batt for top quality mattresses. The unit is designed and built by Proctor & Schwartz of Philadelphia, Pa.



Close-up of Clipper lacing used on drive belt of feed in batt making line



Close-up of Clipper lacing used on a traveling apron in the line

CLIPPER Joints ease installation problem, are as flexible and durable as the belt itself

Feed belts and drive belts are easy to install when Clipper laced. Joints as smooth and durable as the belt itself are easily made by one man using Clipper method. Clipper lacers develop up to 45,000 pounds of pressure to imbed specially designed Clipper steel wire hooks flush with the belt. The strain is evenly distributed across the width of the belt so that the joint is smooth and durable. It operates well on both small and large diameter rollers.

When you have two ends to join, chances are you can join them easier with Clipper hooks and lacers. Any type of belting material in various widths and up to 13/32 inch thick can be laced faster and better by Clipper.

For more information — Detailed product information and case history examples of Clipper machine lacing benefits are contained in Bulletin No. 157. Send for your free copy today.

Ask your Industrial Distributor for Clipper Products

Clipper BELT LACER COMPANY

980 Front Ave., N. W., Grand Rapids 2, Michigan

PERSONAL NOTES

R. B. Hicks has been named superintendent of Hyde Park Mills, Covington, Tenn.

Raymond E. Patton has been named superintendent of Eastern Mfg. Co., Selma, N. C.

Paul A. Koppe, Jr., has been appointed plant manager of the Rockford Textile Mills, Inc., McMinnville, Tenn. Mr. Koppe will be responsible for the manufacturing activities and direction of all practices, and quality of the products produced by the company.

Rufus Handback has been named cloth room overseer of Lydia Cotton Mills, Clinton, S. C.

George R. Villa has been elected president and chief operating officer of United States Rubber Co. • • • **Earl Hanners** has been promoted to overseer of spinning, spooling and warping at the Stark plant. **Render Parham** has been named supervisor of labor standards.

Phillip H. Dougherty, purchasing agent for Sellers Mfg. Co., Saxapahaw, N. C., has been named chairman of the Mayor's committee for employment of the physically handicapped in Burlington, N. C. **C. Almon McIver,** vice-president of Baker-Cammack Hosiery Co., is mayor.

Lee R. Head, Jr., has been appointed personnel and industrial relations director of the Pendleton Manufacturing Co., a division of LaFrance Industries.

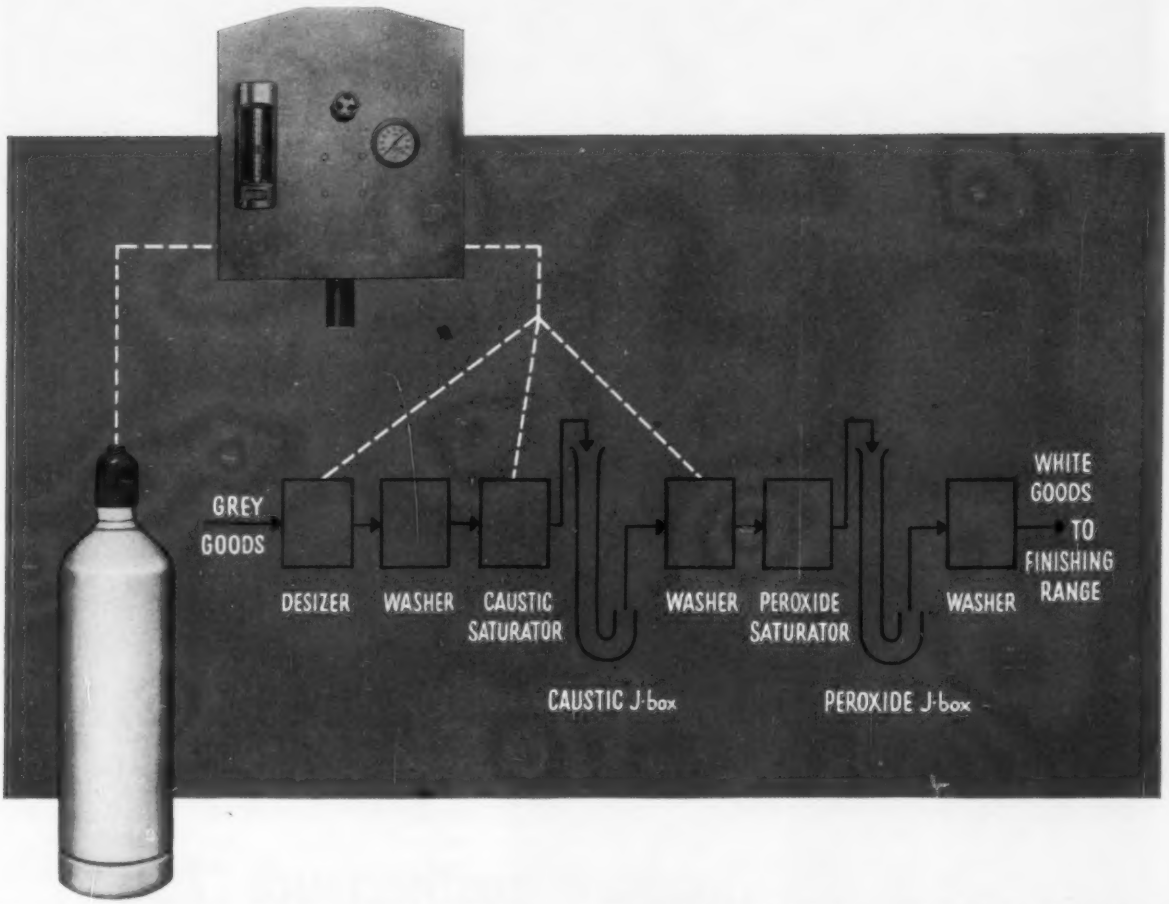
James S. Rotan has been named vice-president of Catlin Farish Co., a division of Burlington Industries, Inc.

John C. Andrews has been promoted to director of purchasing for Bates Manufacturing Co., and **William E. Murphy** has been named purchasing agent.

David Harrison has been promoted

Continued on page 162

THE PENNSALT DIRECT CHLORINATION PROCESS HELPS CUT YOUR BLEACH CHEMICAL COSTS!



Pennsalt's latest technical service aid to textile finishers is a new, low-cost process* for introducing chlorine gas directly into continuous peroxide bleaching systems. The process adds chlorine to your caustic desizer, caustic saturator, and/or to the washer preceding the peroxide saturator. The result—*substantial chemical savings.*

The Pennsalt chlorination process is simple, yet effective . . . requires no expensive additional finishing equipment . . . no complex testing procedures . . . no additional operators. The simple, inexpensive control equipment pays for itself quickly through reduced chemical costs.

Pennsalt's textile finishing service can help you reduce finishing costs through direct gas chlorination. Let us give you a thorough demonstration in your mill at no charge. Ask your Pennsalt representative for details, or write Industrial Chemicals Division, PENNSALT CHEMICALS CORPORATION, 3 Penn Center, Philadelphia 2, Pa.

To get the most from your finishing operations ask for Pennsalt textile service. Assistance like this is only a part of the complete, personalized technical service available from Pennsalt. And for the most from your chemicals be sure to ask for Pennsalt caustic soda, chlorine, hydrogen peroxide, ammonium chloride, ferric chloride and surfactants.

*Patent applied for

See our complete listing in Chemical Materials Catalog

Industrial Chemicals Division

SALES OFFICES: ATLANTA • CHICAGO • DETROIT • NEW YORK
PHILADELPHIA • PITTSBURGH • ST. LOUIS • APPLETON
TACOMA • PORTLAND

INDUSTRIAL QUÍMICA PENNSALT, MEXICO CITY

Pennsalt Chemicals
ESTABLISHED 1850

Coiling in 15" through 18" diameter cans up to 42" high.

Introducing...

The Ideal Feathertouch '750'

The most efficient super speed drawing ever produced

This two delivery frame produces as much sliver of the highest quality as does the average latest model four delivery frame. The Ideal '750' permits safe, practical, and steady speeds of 750 fpm with far less downtime than is encountered with four delivery frames. It saves on original investment, saves floor space, and drafts all fibers and blends.

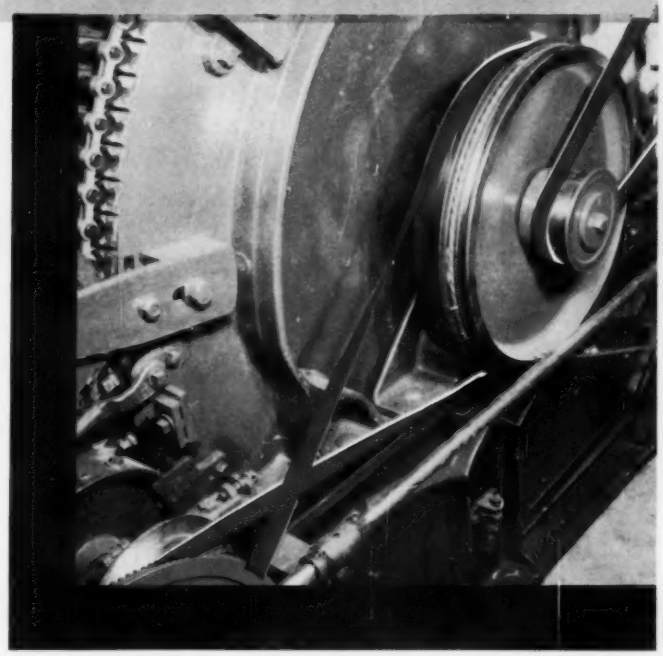
Write today for full information on the extremely efficient Ideal Feathertouch '750'.

Ideal Industries, Inc.
Bessemer City, N. C.

THE ORIGINATORS OF HIGH SPEED DRAWING

NOW...from Louis P. Batson

...GLOBE TEXTILE BELTS to save money and man-hours in your mill.....



GLOBE

WOVEN ENDLESS BELTS FOR TEXTILE MILLS

Lickerin, Doffer, Flat Belts, Air Strippers, Gainer Belts, Round Braided Endless Card Bands, Evener Picker Drives and Rockwood Drives.

Globe Belts will give you constant speeds, more uniformity, less yard-to-yard variation, cut adjustment down-time — when you equip with Globe Belts of stretch-resistant nylon, Dacron, or cotton, with fray-proof edges. Get Globe for low price, high tensile strength, flexibility, long wear. Equip six cards today.

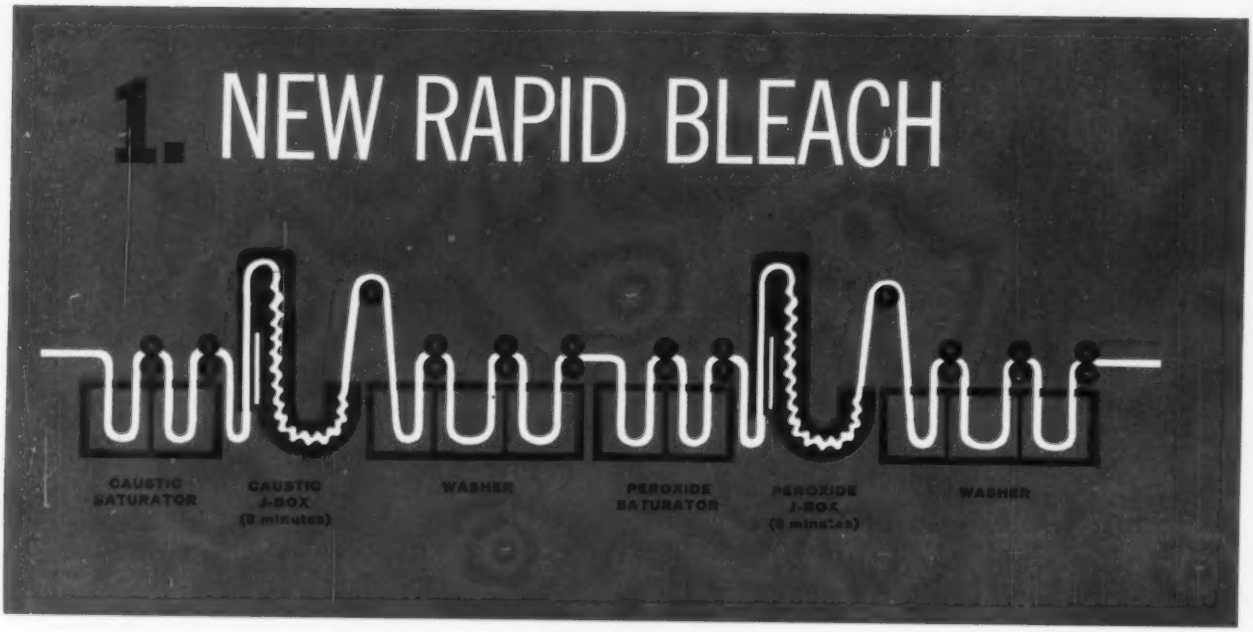
SALES AGENT
Louis P. Batson Company
Box 772 • Phone CEdar 2-7691
Greenville, S. C.
Supplies in Stock

WALTERS BELTING INDUSTRIES
ENDLESS BELT division of
GLOBE WOVEN BELTING CO., INC.

From Du Pont—originator of Solo-Matic* Bleaching

Two new cost-cutting

1. NEW RAPID BLEACH



ADVANTAGES

- Cuts cloth storage time to as low as 8 minutes in each J-box
- Cuts J-box costs up to 75%
- Eliminates bruises, rub marks, creases
- Improves dyeing quality

DESCRIPTION

Rapid Bleach is a new continuous process for medium to heavyweight fabrics that can improve bleaching quality . . . and give fabrics high absorbency for excellent dye receptivity. It's a continuous, compact, fast bleaching process that incorporates a caustic pre-treatment in the first J-Box and reduces mechanical handling operations. Rapid Bleach can be adapted to any continuous or semi-continuous open-width system . . . and is specially suitable for hard-to-handle heavyweight fabrics that are susceptible to bruising.

HOW YOU CAN PROFIT FROM DU PONT'S PROCESSES . . . SERVICES . . . PRODUCTS

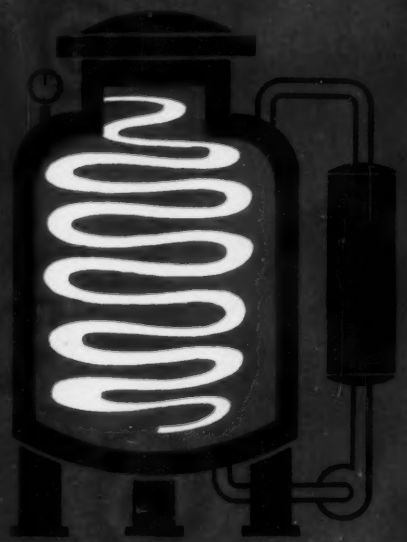
Whether or not you use any one of the Du Pont developed bleaching processes, you can count on the advice and help of an experienced Du Pont Technical Representative. He will help you with any bleaching problem that might arise or, if you wish, he can conduct a confidential survey of your entire bleachery to pinpoint where and how you can save money, improve bleaching.

Du Pont bleaching agents ensure excellent uniformity and high bleaching efficiency. All are thoroughly tested and proved by successful mill experience. All are available from convenient shipping points. Du Pont offers modern bleaching processes, technical services and quality products to help you keep *your* bleaching quality high—and your costs low. Use them and profit!

ALBONE® hydrogen peroxide SOLOZONE® sodium peroxide PERBOX® sodium

bleaching processes

2. NEW PRESSURE BLEACH

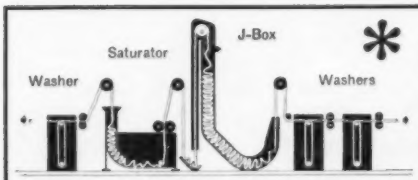


ADVANTAGES

- **Reduces process time up to 50%**
- **Doubles production in the same space**
- **Uses present equipment**
- **High-quality bleaching**

DESCRIPTION

This new high-speed bleaching process for kiers and package machines is a pressurized or high-temperature system that eliminates the need for caustic boil pre-treatment. The Pressure Bleaching process is used in cases where a plant's output or space does not warrant a continuous setup . . . can be easily adapted to present equipment. All types of cotton fabric, yarn and raw stock can be bleached uniformly at the lowest cost.



DU PONT SOLO-MATIC is an advanced single-stage process for high-speed rope-form bleaching. It can double your production in the same floor space or maintain the same production in half the space. Solo-Matic is now helping more than 25 major mills improve bleaching quality and trim costs. With the addition of Rapid Bleach and Pressure Bleaching, Du Pont processes cover all phases of cotton bleaching. No matter what your needs, Du Pont has a modern process to help you.

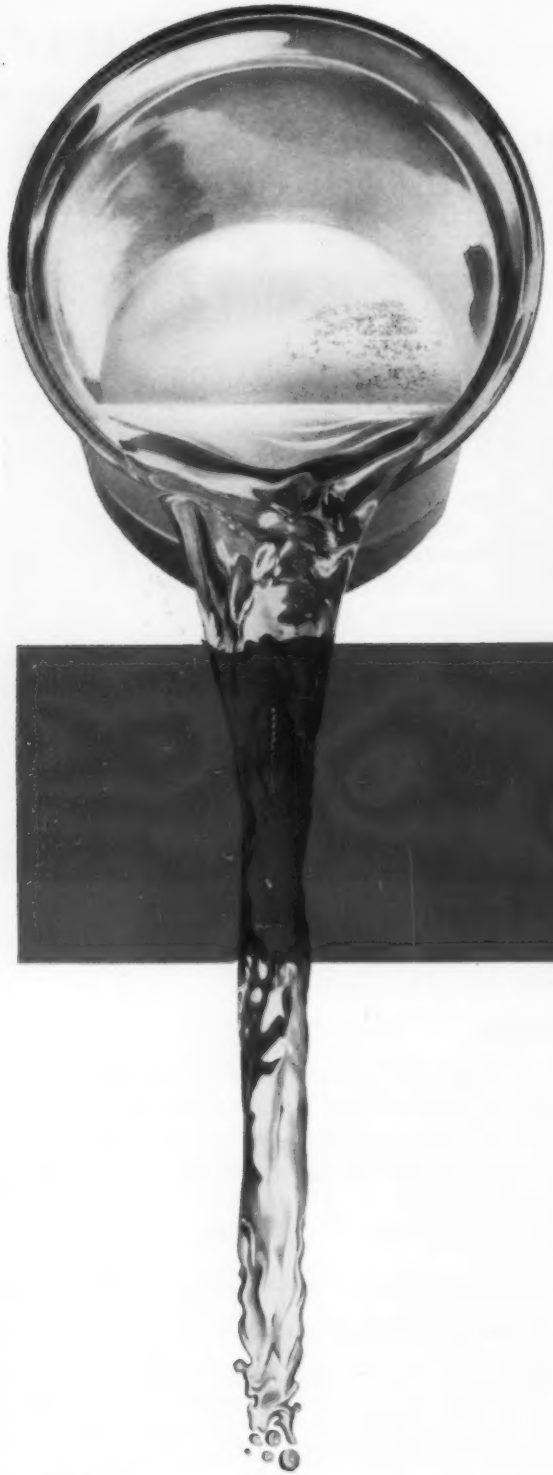
For more information, write or call:

E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department
Peroxygen Products Division, Wilmington 98, Delaware

DU PONT
REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

borate perhydrate OXONE® monoperoxysulfate SODIUM PERBORATE



made for better textile processing!

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CAUSTIC

We take every possible precaution in the production, handling and storage of our caustic soda . . . right down to polish filtering just prior to shipment . . . to assure maximum purity. As a result, there's less chance of depositing troublesome metals and other contaminants on your goods in process. Impurities that aren't there just can't cause trouble!

When processing difficulties do arise, whether or not they involve the use of caustic, we're prepared to supply experienced technical assistance *in the mill* as well as in our specialist-staffed Princeton laboratories.

You'll frequently find this bit of extra help to be of great value . . . and we're glad to provide it at no added cost. May we serve you?

CAUSTIC SODA: Liquid 73%; Liquid 50%, Regular and Low-Chloride Grades; Flake, Solid and Ground.

CAUSTIC POTASH: 45% and 50% Liquid; Flake.

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Putting Ideas to Work

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Chlor-Alkali Division

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Picker Overhauling Is Simple When You Depend On . . .

Aldrich Repair Service

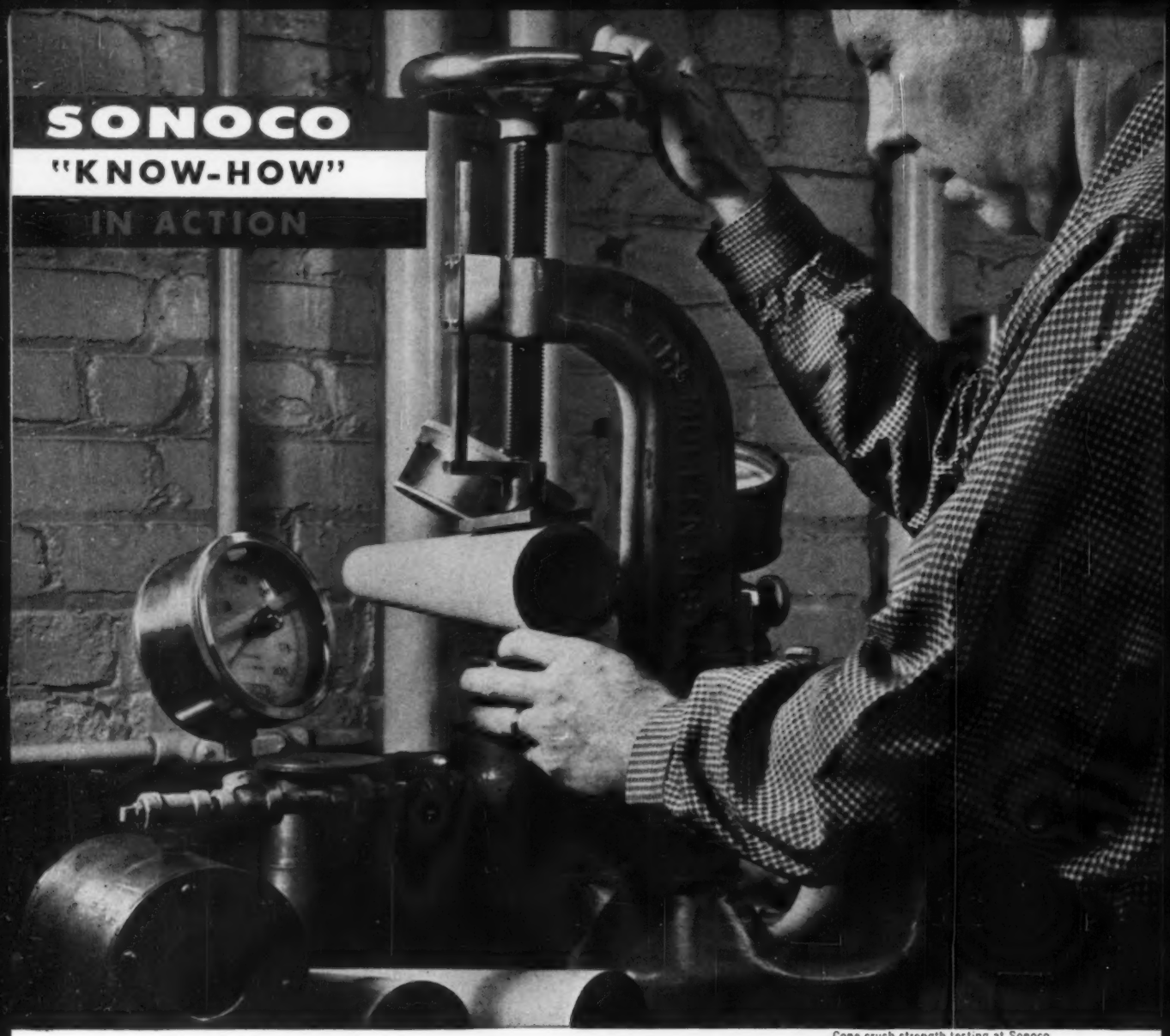
We furnish skilled men for reworking pickers, and can deliver to these men any needed parts within 24 hours in most southern states, and within 48 hours to almost any cotton mill in the United States. This makes thorough overhauling a simple matter. Anything needed for a good job can be had at once, while the machine is down for repairs.

If you do your own overhauling, this speedy delivery service is just as valuable. You don't have to wait for repair parts — they are there when you want them.

We manufacture and install complete blending, opening, and picking systems for cotton and synthetics, and cleaning systems for cotton.

Aldrich Machine Works

Greenwood, South Carolina



Cone crush strength testing at Sonoco.

Cone testing helps assure your profits!

This machine, for measuring the crushing strength of cones, is one of several testing devices employed by Sonoco to maintain and improve the strict quality standards of cone production. In addition to testing, this machine is used in the development of special cones for Sonoco customers.

The development of a cone for a specific purpose is not a simple procedure. The *correct combination* of paper, adhesives, surface and taper is required to produce a cone that will give dependable, trouble-free performance in winding operations. However, constant Sonoco research, coupled with skilled engineering and modern production facilities, make this customer service a daily routine. And still, Sonoco cones are low priced, making *one-time-use* practical.

Sonoco cones are typical of the dependable products manufactured by a fully integrated company with 60 years' experience in producing all types of paper textile carriers. *Only Sonoco,* in its field, provides the necessary knowledge, skill and capacities to meet the ever-changing techniques of the textile industry. *Let Sonoco experience help you!*

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ANTI-FRICTION TWISTERS

"so quiet you can hear the cost drop"

DO IT YOUR WAY

- **Cutting cost to a minimum**
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Features and specifications
to fit your requirements:

RING SIZE
Up to 9" on Model M
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8" ring — Model M — Up to 4200 RPM
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STOP MOTIONS
Electric frame knock off
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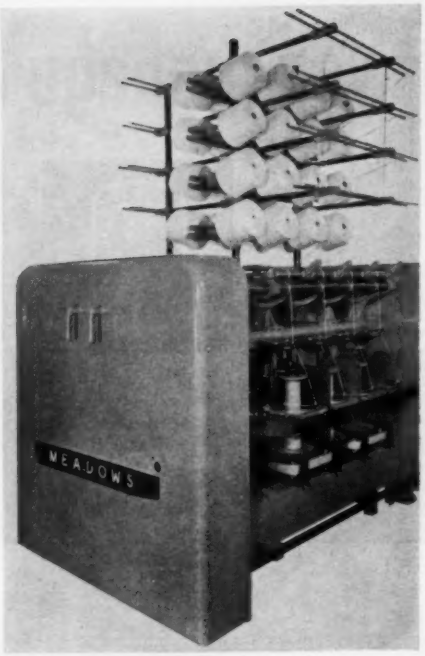
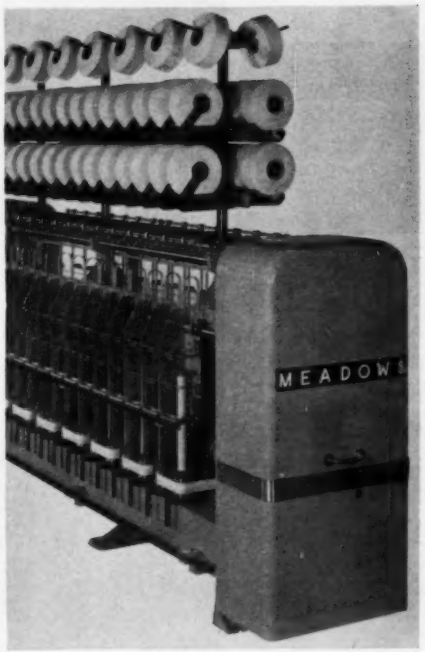
Meadows Twisters will handle *any fibers or filaments that can be twisted on ring frames* . . . the most economical and efficient way.

Should you have twisting problems, or *want to cut your twisting* cost . . . call in Meadows Engineers.

Give us the opportunity to let *you profit* from our years of twisting experience.



MODEL M



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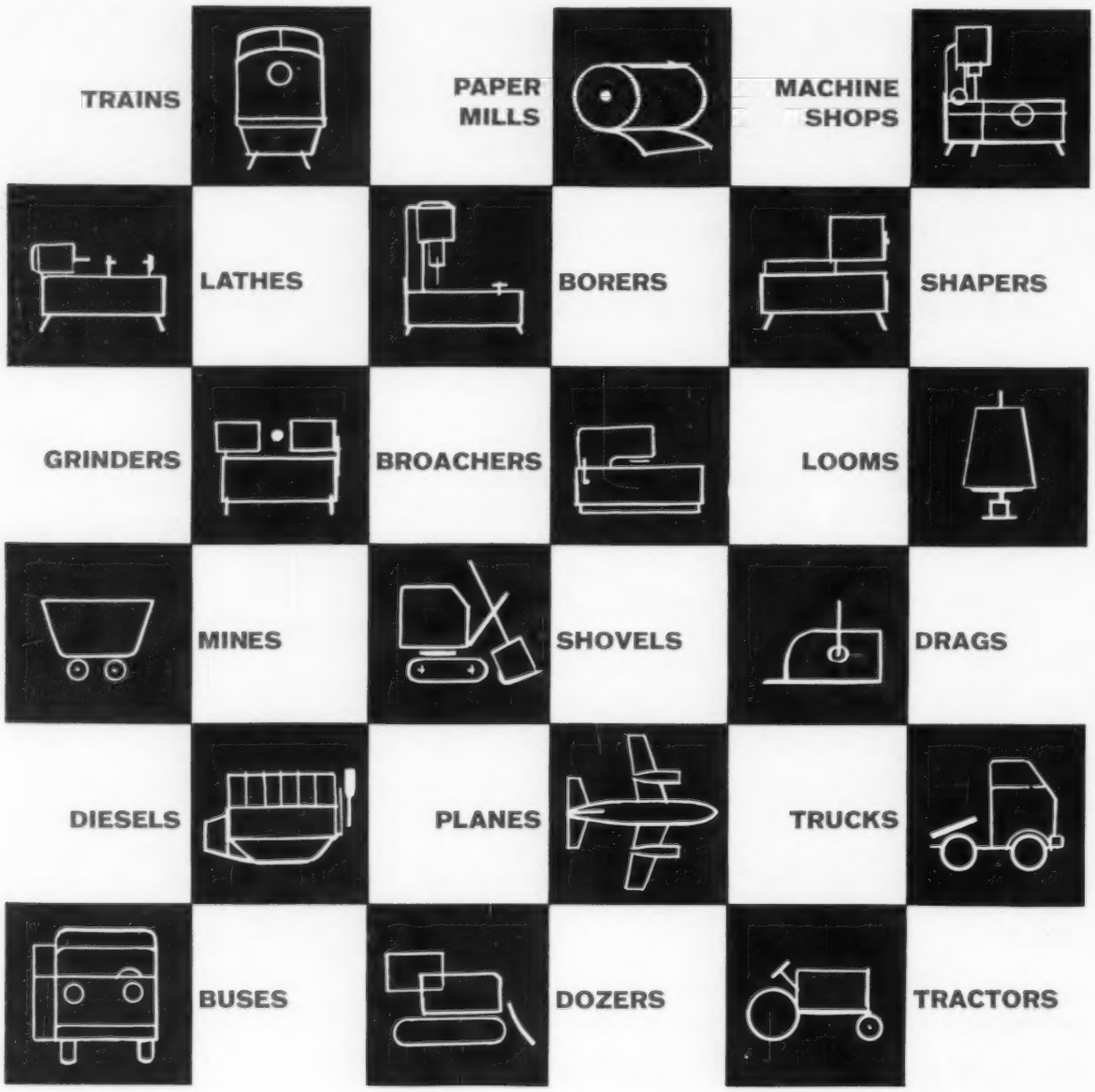

. . . your best move is to Sinclair's specialized greases, oils and lubricants, to cut costs, speed operations and increase profits. There are more than 500 of these money-savers, and each does its particular job particularly well. For helpful information based on actual experience, call your Sinclair Representative or write

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AHCOVEL—the first and foremost range of softeners — serves more vital functions in textile processing today than ever before. Available in a wide range—cationic, anionic, and non-ionic—there is an Ahcovel to meet the finisher's most exacting requirements for softening, lubricity, resin compatibility, static and soil resistance. For ease of processing and quality of finish—Ahcovel has earned an enviable reputation. AHCOVEL ... the best known name in the world of softeners!

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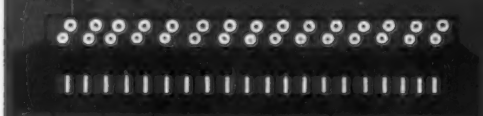
The industry's standard — proven by every major glass fibre producer. New features, new capabilities.



Jumbo Texturizers

Big, *big* packages of "Taslan"* Textured Yarns — produced 10" by 10" from standard yarns.

Vertical Spoolers

New, higher spooling speeds with more spindles in less floor space. Cleans, oils, winds in one operation.

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3 machines in one — conventional, headless package, and combination package up-twister.

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* *"Taslan" is Dupont's registered trademark designating textured yarns made in accordance with quality standards set by Dupont.*

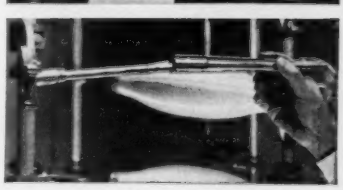
A KIDDE CREEL can handle any package...

present-day or future development!

Talk about versatility! Kidde creels are designed to handle any package—any size, any shape—simply by using adapters like those in the pictures at right. Clamp type construction makes it easy to change vertical or horizontal spacing to accommodate different sizes and shapes. And Kidde will design holders and adapters for present creels to take any future packages developed!

Kidde works with you to build the creel your operation requires—horizontal or vertical, magazine or non-magazine—any size from 40 to 4,000 running ends. And Kidde tension devices can handle the entire range of yarns—natural or synthetic, filament or spun.

Why not send for our booklet describing all the advantages of Kidde creels. Just write or phone.



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TEXTILE MACHINERY CORPORATION — BLOOMFIELD, NEW JERSEY

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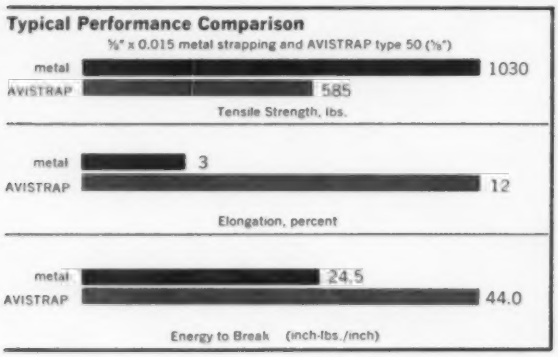
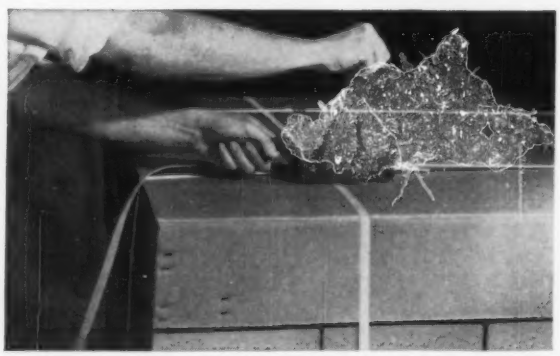
NEW TOUGHNESS

It actually takes more energy to break AVISTRAP cord strapping than to break comparable-width metal strapping. Though metal has greater tensile strength, AVISTRAP—made of high-tenacity Avisco® rayon—has greater "working toughness." Strapping must either extend enough to absorb shock-energy or fail. Metal strap has far less elongation before breaking than AVISTRAP. As a result, AVISTRAP is still stretching, soaking up energy, and holding the package together after a metal strap would have stretched to its breaking point and failed.



Vital statistics. This comparison is the result of careful laboratory tests, using an Instron Tensile Testing Machine. In tests covering metal strapping from ¼" through ¾" width and from 0.012 through 0.023 thickness—AVISTRAP outperformed metal in terms of energy to break in every instance.



Toughness pays off here. AVISTRAP can be tightly tensioned without danger of sudden breaks, will not lash out with jagged ends. Strap breakage during handling and shipping is reduced. Other advantages: no sharp edges, light weight, easy handling, easy unpacking.

AVISTRAP* CORD STRAPPING

Economy • Local Service • Easy Handling • Reduced Damage • Safety

AVISTRAP*
CORD STRAPPING

*Trademark of American Viscose Corporation, Patents Pending.

Write for technical bulletin #4, covering AVISTRAP cord strapping strength tests. Include any other specific technical questions you may have. If you wish, arrangements can be made to demonstrate AVISTRAP cord strapping in your plant. AVISTRAP cord strapping, tools, accessories and application services are now available in all major U.S. industrial areas, through authorized local distributors. AVISTRAP district offices are listed below.

AMERICAN VISCOSE CORPORATION, INDUSTRIAL PACKAGING DEPT., 1617 PENNSYLVANIA BLVD., PHILA. 3, PA.
District offices: Atlanta, Ga., Boston, Mass., Charlotte, N.C., Chicago, Ill., Columbus, Ohio, Dallas, Tex., Denver, Colo., Los Angeles, Calif., New Orleans, La., New York, N.Y.

Proctor makes another friend in the textile industry

Mr. C. W. Schwartz, IV, Proctor Sales Engineer and Mr. Robert J. Verlik, Plant Manager, Stafford Printers, Inc.

Only three months after installing a Proctor Loop Ager, Stafford Printers, Inc., of Stafford Springs, Conn., tells a remarkable success story—one that is being repeated again and again in the textile industry today.

Formerly, all goods were processed through two roller vat-type agers, but output lagged badly behind print machine capacity. With its new Proctor Loop Ager, however, Stafford increased its discharge print production by 85%! Also, thanks to Proctor, aging speed was increased from 40-50 yards a minute to 100-120 yards a minute. As a result, direct labor savings amounted to 60% per yard.

But these statistics don't tell the whole story. Stafford has also realized savings in dye and chemicals. Steam consumption was reduced by 50% per yard; better color yield and improved fixation have resulted.

Is there a weak link in your production chain? If so, take the first step towards making it stronger by contacting your Proctor representative today, or write directly to PROCTOR & SCHWARTZ, INC.

When you modernize with Proctor, you'll be years ahead for years and years.

Proctor

PROCTOR & SCHWARTZ, Inc. 7th Street & Tabor Road, Philadelphia 20, Pa.

Du Pont Announces a New Name for their oil-free urethane clear:

IMRON™

Textile Floor Finish

Du Pont Textile Floor Finish, the outstanding clear varnish for interior wood or concrete floors, now has a brand-new name: IMRON Textile Floor Finish.

IMRON is the *same* textile floor finish that has proven its superior durability in so many applications where conventional varnishes fail rapidly. In textile mills, paper mills, industrial plants and other installations where traffic is h e a v i e s t, IMRON outlasts regular first-grade varnishes *2 and 3 times over!*

IMRON is recommended for use on stairs, doors and partitions as well as floors—any place, in fact, where a very tough, elastic, clear protective coating is desired. A single-package, oil-free urethane clear, IMRON possesses wearability and protective characteristics not available in Alkyld, Phenolic or Epoxy floor varnishes.

IMRON dries quickly to an attractive high gloss that's rugged and durable. Almost colorless when applied, it stays light and pale for years. (Heavy coats won't wrinkle.) And best of all, with IMRON you can apply the first coat on an off-day morning, the second coat that afternoon, and let full traffic back on it by midnight!

For complete information on IMRON, the tried and proven textile floor finish, write today to: E. I. Du Pont De Nemours & Co. (Inc.), Finishes Division, Department TI-12, Wilmington 98, Delaware.

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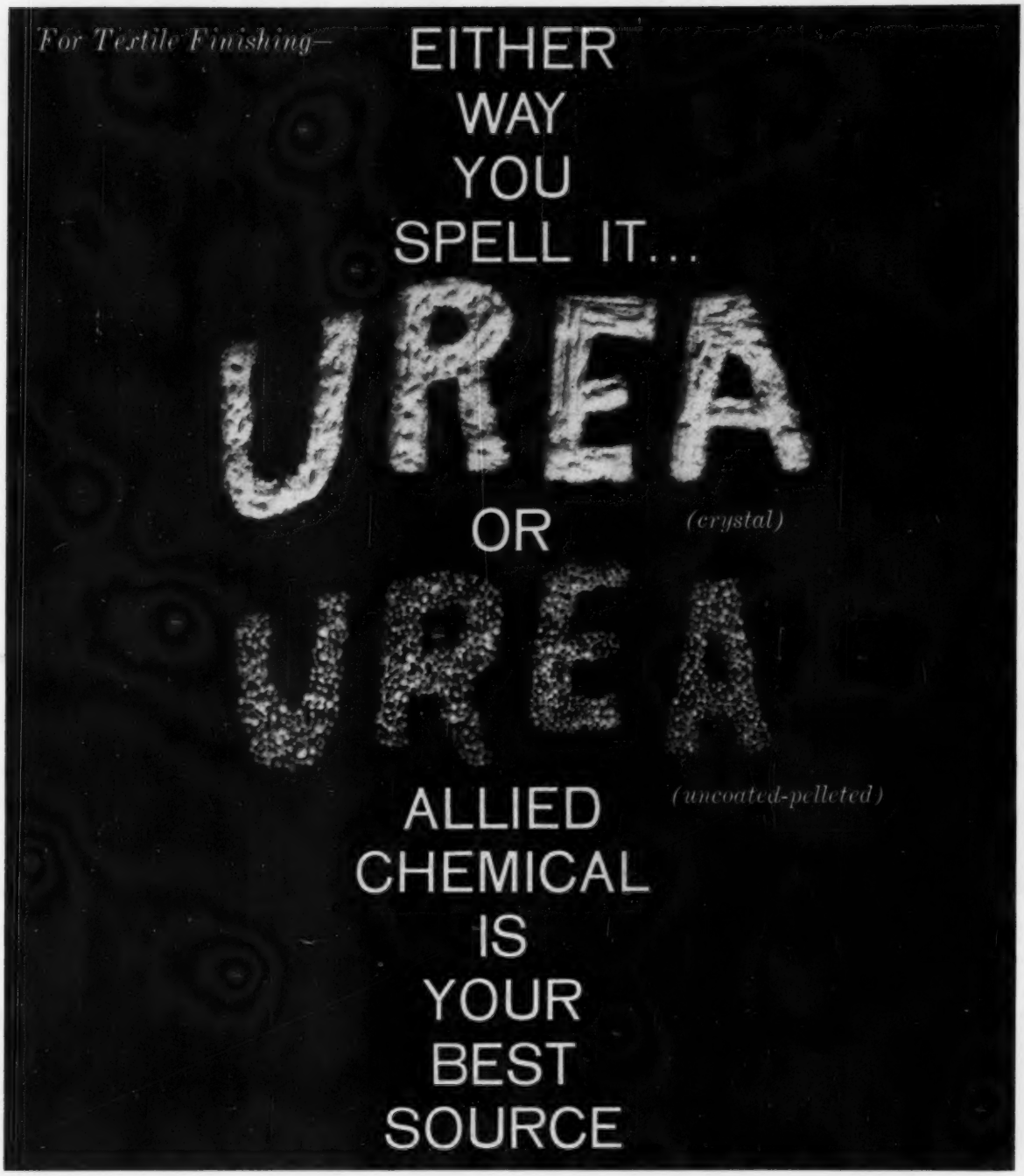
BETTER THINGS FOR BETTER LIVING... *THROUGH CHEMISTRY*



Whatever form of urea you need, you can count on Allied Chemical for fast service on a product of highest purity and uniformity.

Extremely valuable for textile applications, it's used: in acid and direct dyes for screen and roller printing; with starch and other materials for weighting, sizing and finishing; in flame-proofing compositions; and in resins to improve crush and crease resistance.

Allied Chemical Urea in uncoated, pelleted form is preferred by many textile users because of its free-flowing characteristics, and its ease of handling and storage. Both forms are supplied in the quantities to suit your special requirements.

Want full technical and price data? Write Allied Chemical . . . the country's first multi-plant producer of quality urea for industry.

For specifications and local offices, see our insert in Chemical Materials Catalog, pages 475-482 and in Chemical Week Buyers Guide, pages 37-44.

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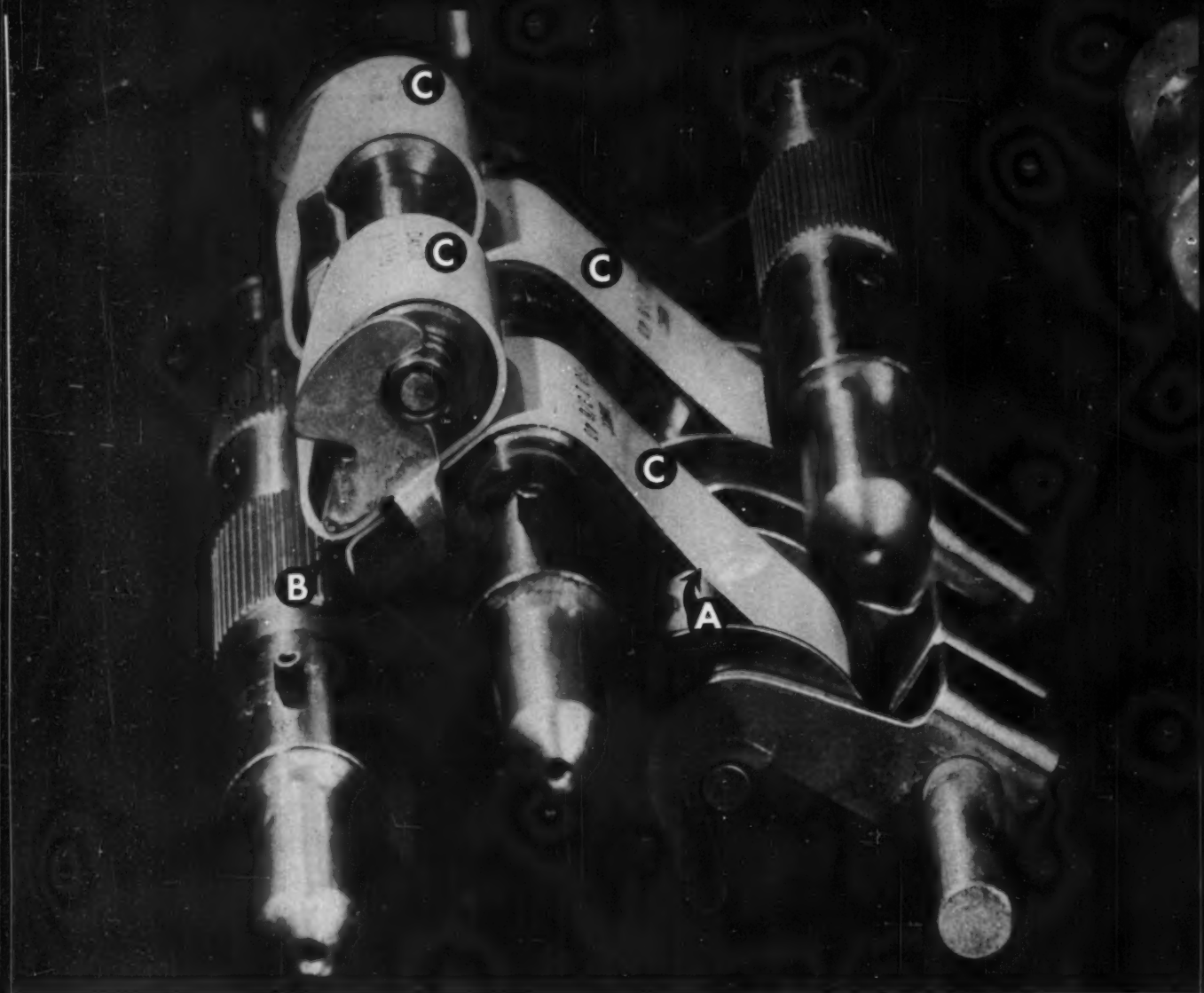
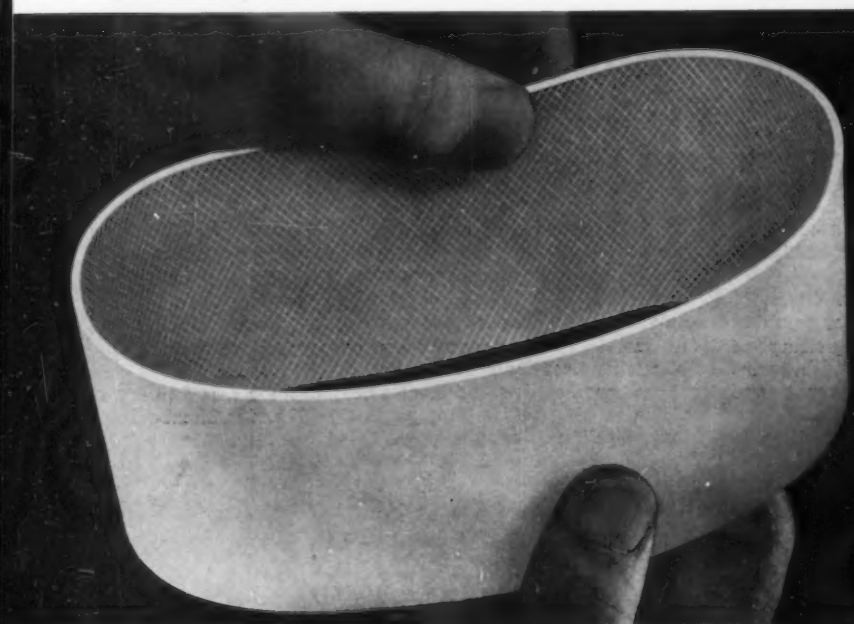
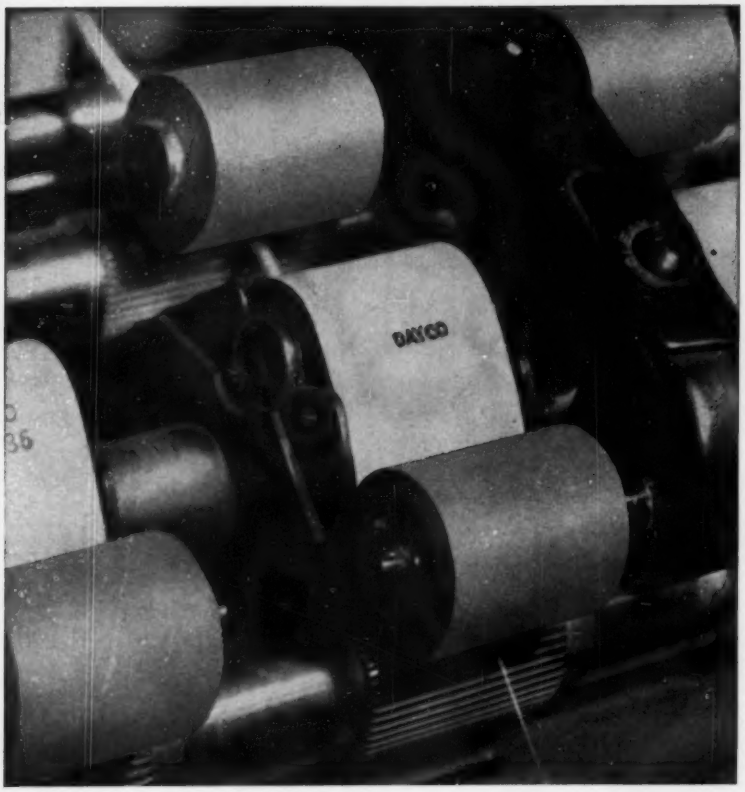


ACTUAL WORKING MODEL of long-apron system shows: (A) Patented embossed surface for precise coefficient of friction and abrasion-resistance formulated to last for years: (B) Unmatched flexibility at nose-bar for consistently smoother performance and top quality yarn: (C) Guaranteed yarn control due to a cleaner spinning outside surface.



EXCLUSIVE . . . patented by Dayco . . . your only source for this important friction-right improvement in aprons that made possible lower power and increased production. It's another example of Dayco's continuous research program to increase economies and production.



A COT FOR EVERY PURPOSE—as well as a virtually all-purpose cot! That's the great Dayco story to meet every need for surface texture, densities, dimensions, sizes, kinds. Whether man-made fibers or mixtures are your spinning problem, Dayco research in the laboratory and in the field guarantees consistently better results and greater savings.

NEW RECORD-BREAKING SPIN-AND-WEAR PERFORMANCE

with Dayco on any apron system

For super-quality yarn—consistently, month after month—nothing matches Dayco's patented Embossed Apron for long-apron systems. Here's super-smooth drafting action—unequalled flexibility and precision friction surfaces on both sides to meet any and all conditions. No more tucking or jamming at the nose-bar . . . no more ozone breakdown . . . no more abrasive problems for months and months.

Improve your yarn quality . . . up your spinning performance with the pioneer and leader in the field —Dayco!

Ask your Dayco Representative to set up a trial installation. Phone or write Dayco Textile Products Co. (Formerly Dayton Rubber Co., Textile Division) 401 S. C. National Bank Bldg., Greenville, S. C.

Dayco TEXTILE PRODUCTS CO.

Divison of Dayco Corporation

OVERSEAS PLANT: THE DAYTON RUBBER CO. LTD., DUNDEE, SCOTLAND

Dayco All-Purpose Cots exceed 300,000 spindle-years WITHOUT REBUFFING

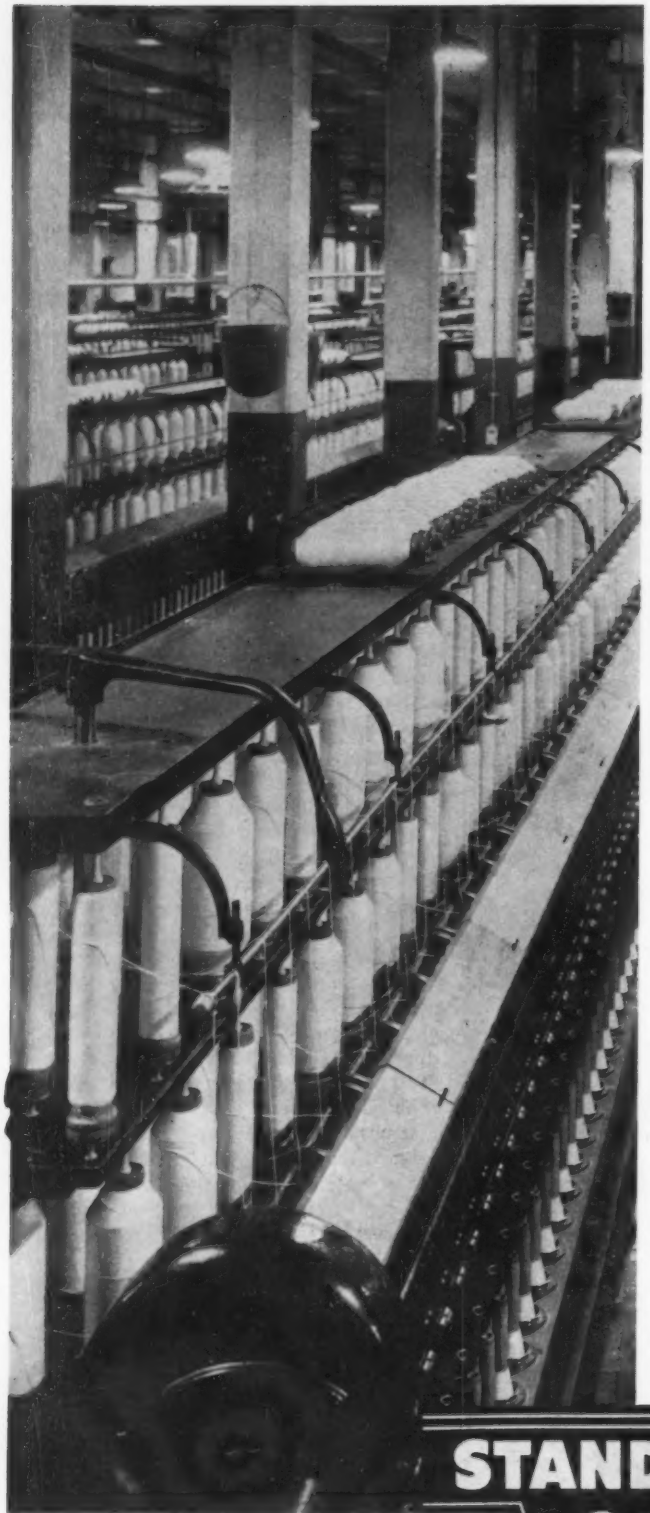
300,000 spindle years without the need of the usual periodic buffing! That's the 2½ year record from just one 120,000 spindle plant using Dayco's ALL-PURPOSE SG-60 cots.

Add to this amazing wear record the great volume of high-quality yarn coming off the production line and you can see the outstanding efficiency of the versatile SG-60.

But with more than 70 different fibre combinations running now on production lines, a wide variety of top-quality cots must be used. Now, in plant after plant, Dayco has proved its laboratory tests on its full range of cots in actual production. Dayco offers a cot for every purpose. Each one is specifically designed for outstanding performance in a specific production situation with just the precise coefficient of friction. Dayco Cots deliver more yarn... better-quality yarn in mills everywhere, year in and year out.

This is just another example of Dayco service in the cot and apron field. Dayco's broad, continuous research and laboratory facilities have brought the most practical answers to the textile industry's spinning problems. Dayco's discoveries in precision compounding have resulted in closer precision tolerances than any other on the market.

Dayco research sought and came up with the answers on super-drafting at lower horse-power. Dayco's laboratory maintains quality controls on Dayco's own production line that have no match in its field.



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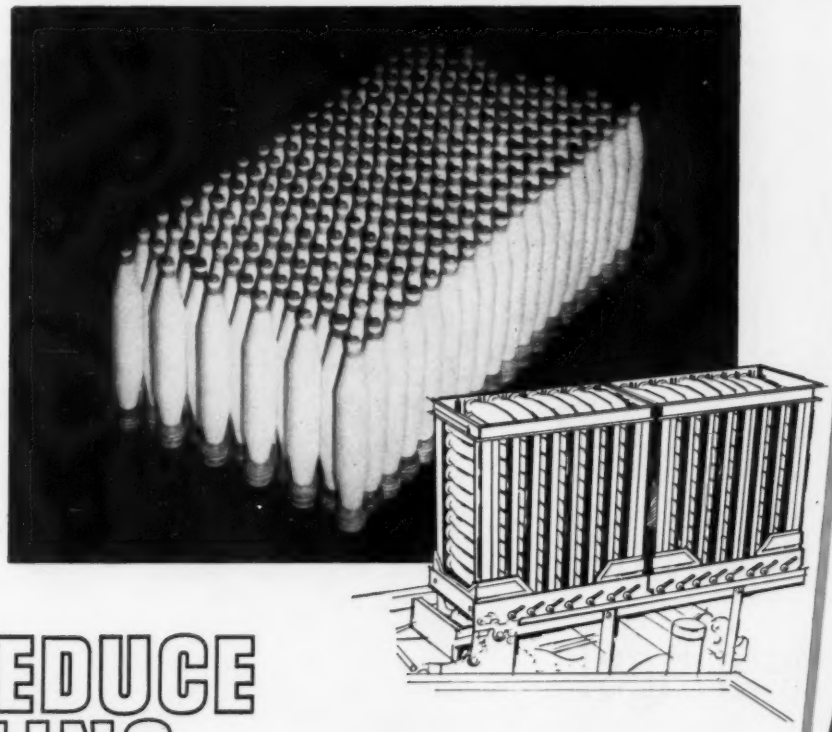
Whatever your lubrication requirements, there's a STANDARD OIL Lubricant "tailored" to fit your need—designed to do your particular job with speed, economy and efficiency.

STANDARD OIL Lubricants have behind them the largest combined facilities for testing and research in the world. These facilities are available to tackle your problems, where they involve a new or unusual lubricant.

STANDARD OIL LUBRICANTS

STANDARD OIL COMPANY
(KENTUCKY)



REDUCE FILLING HANDLING... TO A MINIMUM

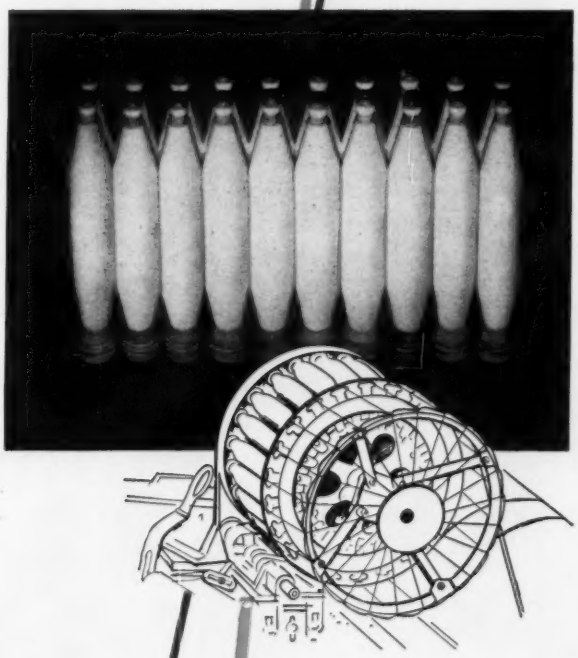
The Draper Automatic Filling Magazine *with a bobbin supply of as many as 192 bobbins** reduces weave room costs.

This increased bobbin capacity, over the conventional Rotary Battery *eliminates much of the cost of delivering filling yarn to the loom.* More continuous loom operation, cleaner yarns and fewer cloth seconds are also direct advantages gained from the use of this magazine.

Compare the Draper Automatic Filling Magazine with the conventional battery and see for yourself the many benefits that can be obtained.

For additional information consult your Draper representative.

**1¼" diameter bobbins*

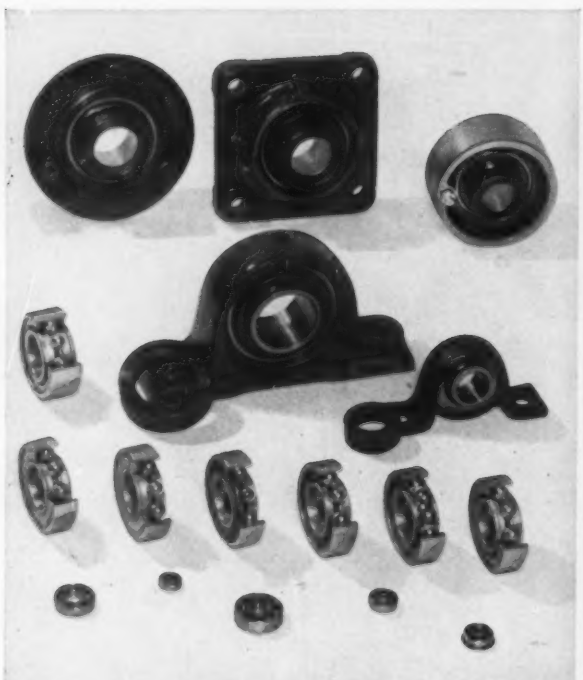


DRAPER CORPORATION

HOPEDALE, MASS. • ATLANTA, GA. • GREENSBORO, N.C. • SPARTANBURG, S.C.

See how Fafnir can "smooth the going" when you need textile equipment ball bearings!

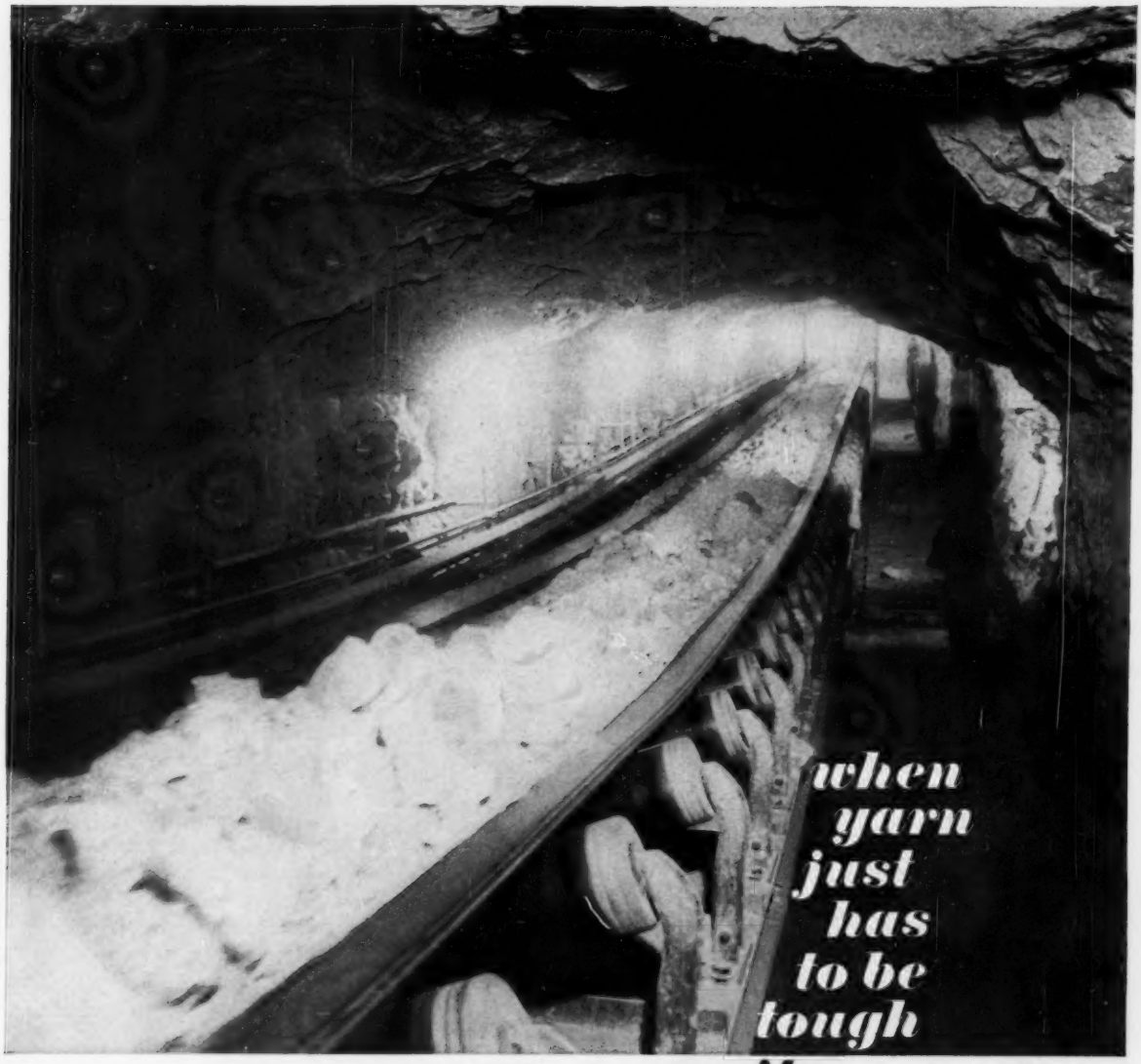
Ball bearing experts to the textile industry — Fafnir's engineering files cover almost 40 years of service to the textile industry. Fafnir textile bearing specialists are familiar with your requirements . . . expert in handling them.



Over 10,000 types and sizes, including a variety of precision tolerances, in Fafnir Ball Bearings can often eliminate the need for "specials". Shown are basic radial bearings, extra-small bearings, and others with typical arrangements of seals and shields.

Capacity is equal to the heaviest demand! Fafnir is America's largest independent ball bearing manufacturer... a dependable source of supply. 26 branch offices, 18 warehouses. Distributors coast-to-coast for replacements. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS



it better be Golden Caprolan® Nylon

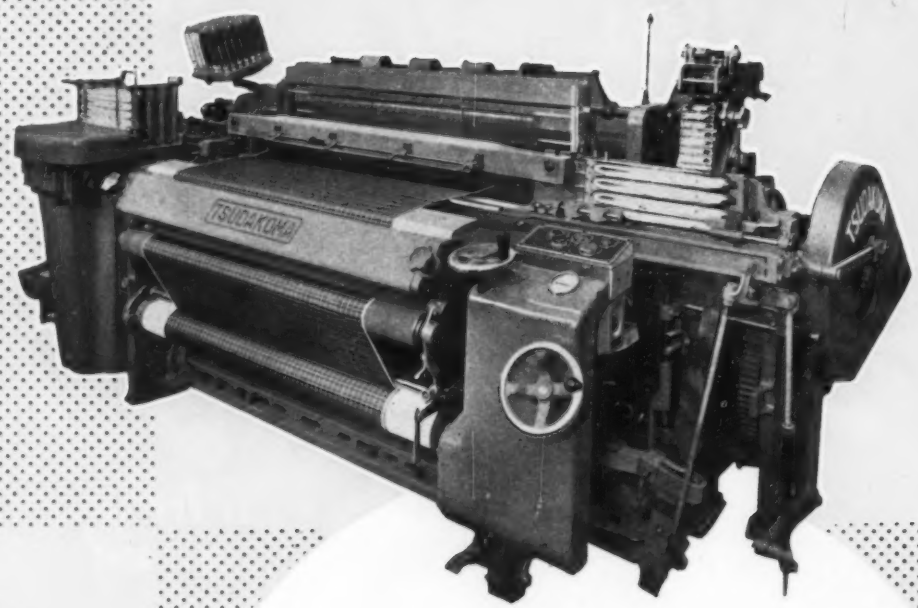
It takes a tough yarn to keep things moving all the time—and tough is the word for high-tenacity Golden Caprolan® by Allied Chemical. But Golden Caprolan is more than just a tough yarn. It is a remarkably versatile yarn that offers a unique combination of superior performance qualities including unsurpassed resistance to abrasion, excellent rubber adhesion, greater resistance to flex fatigue, and troughing qualities not obtained from other yarns. Golden Caprolan established a new criterion for heat stability in nylon tire yarn and a new standard of strength for heavy-duty marine ropes. Golden Caprolan is performing superbly in conveyor belts, tarpaulin fabrics, high-strength industrial webbings, and other applications where heavy-duty performance is essential. If you have a tough job, we have the tough yarn for it. Our technical service, end-use development and fiber application staffs are ready to help.

GOLDEN caprolan NYLON OF THE 60's

Allied Chemical

Fiber Marketing Dept., 261 Madison Ave., New York 16, N. Y.

Tsudakoma



ツダコマ

Automatic Loom and Ordinary Loom
for silk, Rayon, Nylon and all Synthetic Yarns

Dobby

Preparatory Machine

Throwing Machine
High Speed Bobbin Winder
Doubling Machine
High Speed Bottle Winder
High Speed Warping Slasher
High Speed Sectional Warper
High Speed Magazine Creel

TSUDAKOMA INDUSTRIAL CO., LTD.

Head Office : Kanazawa, Japan
Branch Office : Tokyo • Osaka

Eastman now offers textile finishers 3 basic types of polyethylene

New EPOLENE resins enable textile chemists to formulate broader range of softeners

The wide range of properties now available in Eastman's Epolene series provides greater flexibility in formulating polyethylene emulsions for softening "wash and wear" cottons and synthetics, and for textile lubricants and sizes.

Permanent, low in color, non-chlorine retentive and easy to prepare, emulsions based on Epolene polyethylene give you a practical and economical method for improving the hand, abrasion resistance and tear resistance of "wash and wear" treated fabrics.

With Epolene, you can prepare any kind of emulsion system, cationic, anionic or non-ionic, with solids contents of up to 40%.

Choose from three different low-molecular-weight resins to obtain the right emulsion properties and finishing characteristics for your equipment and service.

Epolene E is the highest-molecular-weight resin of the three. It produces stable, low-color emulsion systems of superior quality for use in softening cottons or synthetics, or as a lubricant to reduce needle-cutting and increase sewability. Like other Epolene resins, it needs no curing, lasts through repeated launderings and resists dirt pick-up and redeposition.

Epolene LVE, a new resin type, has a lower melt viscosity than has Epolene E, thus offering somewhat better handling characteristics. Epolene LVE is softer than other resins in the series. The stability of its emulsions in the presence of resin catalysts is outstanding, especially at the low end of the pH scale, as indicated by its relatively high HLB factor.

Epolene HDE is the first high-density, emulsifiable low-molecular-weight polyethylene on the market. Because it is much harder, it improves significantly the abrasion resistance and tear resistance in cotton and cotton blends. Its stability and permanence are excellent. It, too, offers easier handling characteristics during emulsion preparation because of its low melt viscosity.

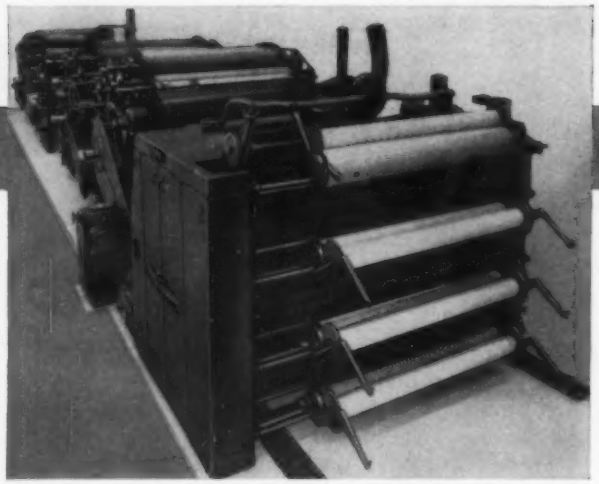
If you are formulating polyethylene softeners and would like to produce stable, economical emulsion systems of superior all-'round characteristics, look to Epolene from Eastman. Let us introduce you, also, to new time-saving and cost-cutting emulsifying techniques developed at our textile laboratories. For more information on the formulating and performance advantages of these superior polyethylene resins or for specific formulating assistance, write your nearest Eastman office. We invite your inquiry.

Property	Epolene E	Epolene LVE	Epolene HDE
Molecular Weight	2500	1500	1500
Density	0.938	0.939	0.956
Ring and Ball Softening Point, °C. (ASTM D-36-26)	104-108	104-105	110-111
Penetration Hardness (100 g./5 sec./77°F., tenths of mm.)	2	5	1
Color (liquid), Gardner scale, max.	2	2	2
Brookfield Viscosity (cps. @ 120°C.)	1500	400	455

Epolene

EASTMAN low-molecular-weight polyethylene resins

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Chicago; Cincinnati; Cleveland; Detroit; Framingham, Massachusetts; Greensboro, North Carolina; Houston; New York; Philadelphia; St. Louis. **West Coast: Wilson and Geo. Meyer & Company,** San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.



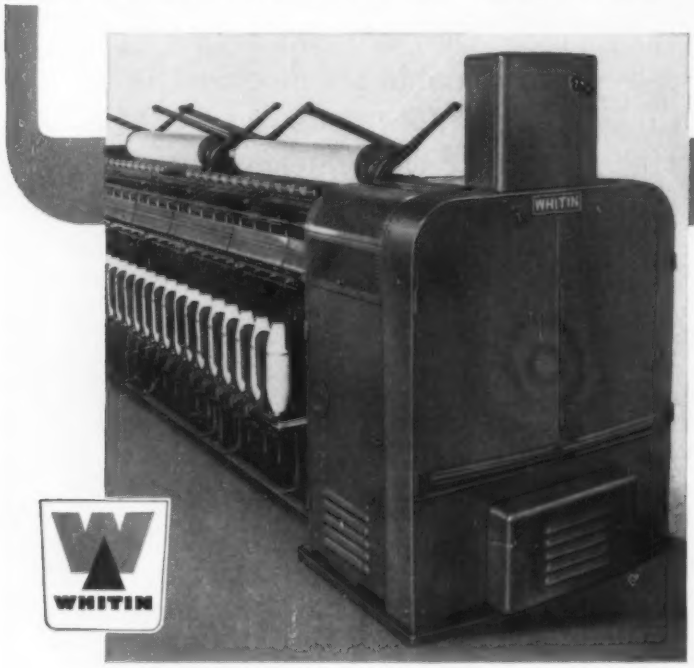
The Whitin Model M Card

- New Automatic Card Feed
- New Tape Condenser
- Variable Speed Fancy Drive
- ATF Variable Speed and V Belt Drive for Feed Table
- V Belt Drive for Strippers, Breast, Doffer, Fancy and Condenser
- Antifriction Bearings throughout
- * P.I.V. Drives on Breaker Feed Rolls and Finisher Doffer

A "Natural Combination" for greater profit

The new Model M Card and the famous FLEX-SPIN Model L2 Wool Spinning Frame are two new "stars" for your production team. The Model M Card in either 60" — 72" or 84" widths has tremendous productive capacity. The FLEX-SPIN with its 16" traverse produces packages carrying up to 20 oz. of soft knitting yarn or up to 32 oz., or even higher, on weaving yarns.

Together, these two great new machines form a feature-filled "natural combination" that's got what it takes — and just what you need — not only to *boost* your production and *maintain* quality, but also to *cut* your operational costs through improved machine efficiency and work simplification.



Whitin Flex-Spin® "L2" Wool Spinning Frame

- Reciprocating Ring and Spindle Rails
- Balloon Control Rings
- Traverses up to 16"
- Simplified Spindle Drive
- Side Shaft Twister Head Drive
- New Antifriction Spindle and Hand Brake
- Variable Speed Drum Drive
- * Pneumatic Waste Removal
- * Automatic Lubrication
- * Vari-Speed Drive

*Optional Equipment

For complete information ask your Whitin representative or write direct to us.

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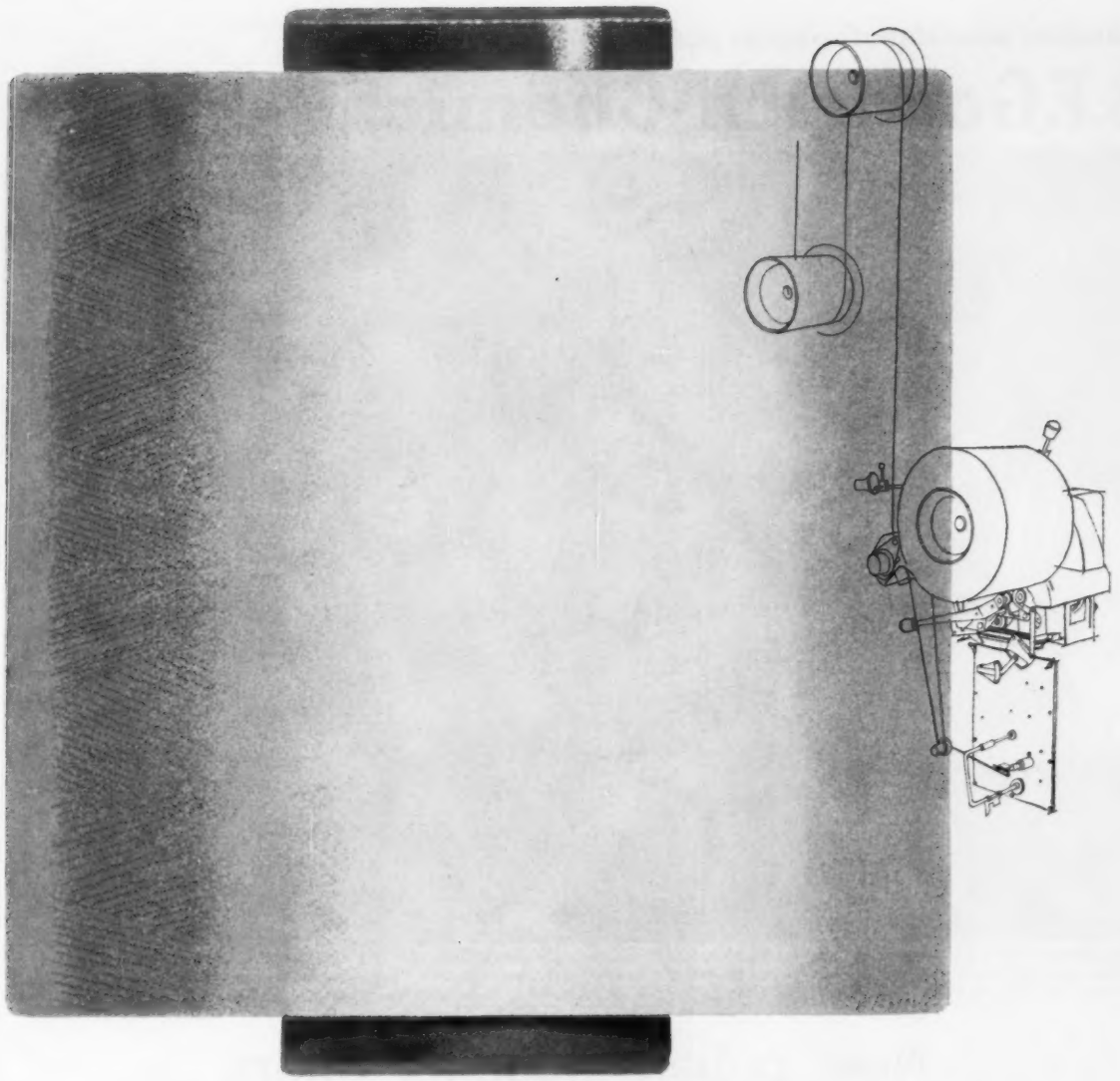
WHITINSVILLE • MASSACHUSETTS

CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.



Investigate the **superior quality** of filament yarn produced with the **Leesona 959 Take-up Machine.** Electronic control maintains accurate constant yarn tension from spinning, drawing, extruding or treating...builds optimum density **precision wound** packages . . . the industry standard. Write **Leesona Corporation,** P. O. Box 1605, Providence 1, Rhode Island.

23T.9.3

LEESONA

Another new development using

B.F.Goodrich Chemical *raw materials*

ULOK Brand Cube-Type Filters, developed by Union Carbide Development Company, a Division of Union Carbide Corporation, New York, N. Y., offer the face area of a 30" x 30" air filter in the frontal area of a standard size filter, 20" x 20". Non-woven material is Dynel modacrylic fiber bound with Geon vinyl latex by Fiber Bond Corporation, Chicago, Illinois. B. F. Goodrich Chemical Company supplies the Geon vinyl latex.

New, cube-shaped air filters use non-woven made with Geon

The unusual shape of this new replacement air filter is planned to take advantage of a fibrous filter medium of uniform density—a non-woven construction made with Geon vinyl latex as a binder. The cube shape presents more filtering surface to the air stream, providing far higher efficiency over far longer life.

The filter design demonstrates how the unusual balanced physical properties of Geon latex as a binder can pay off. Geon is responsible for the resilience and strength in the batt, allowing the material to be cut, sewed, and formed into the required shape while still maintaining its 2" loft.

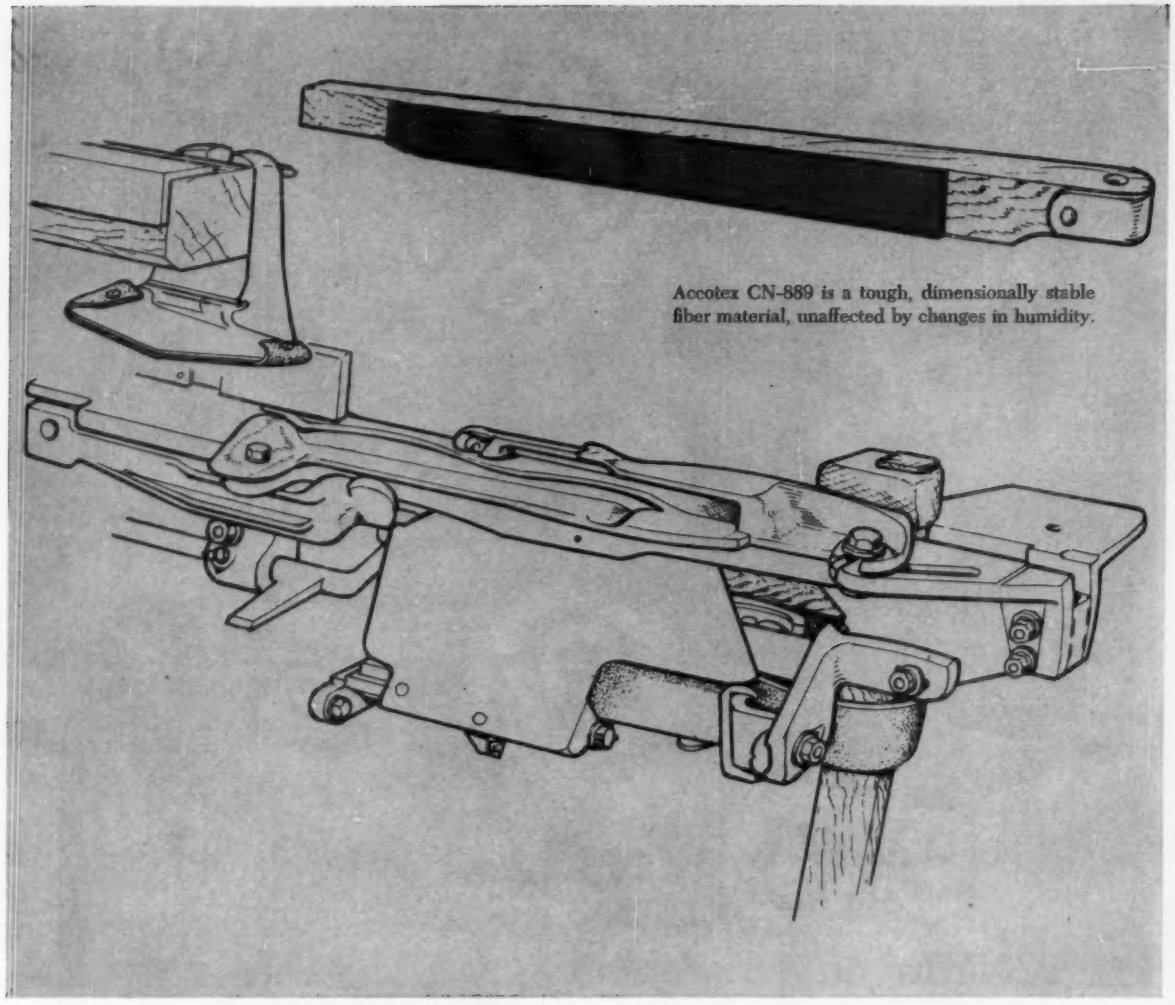
Here's another example of service and products you can get to produce better textiles for wider appeal, at lower cost. For information, write Dept. KA-6, B.F.Goodrich Chemical Company, 3135 Euclid Ave., Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ont.

PRODUCTS FOR TEXTILE IMPROVEMENT

B.F.Goodrich Chemical Company
a division of The B.F.Goodrich Company

B.F.Goodrich

GEON vinyls • HYCAR rubber and latex • GOOD-RITE chemicals and plasticizers



Accotex CN-889 is a tough, dimensionally stable fiber material, unaffected by changes in humidity.

Reduce loom down time with this new Armstrong binder material

Accotex CN-889, a new fiber loom binder material developed by Armstrong, can bring important savings to your operations.

CN-889 helps keep loom down time at a minimum. Even where heavy plastic shuttles are used, it wears much longer than natural materials. And, because it is homogeneous, it wears more uniformly. It requires less break-in, less resetting, less frequent replacement—all of which means fewer shutdowns.

With all its advantages, CN-889 costs less than other loom binder materials. CN-889 is supplied to you in strips cut to fit your loom binders and box fronts.

Why not try Accotex CN-889 on your own looms? To arrange a test installation, contact your Armstrong man today. Or write: Armstrong Cork Co., Industrial Division, 6912 Ivy Street, Lancaster, Pennsylvania. All Armstrong textile supplies are available for export.

Armstrong LOOM SUPPLIES

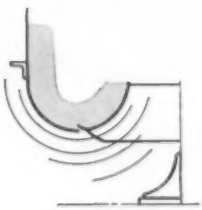
1860-1960 Beginning our second century of progress

THESE ADVANTAGES MAKE "BLH" YOUR BEST BUY FOR

HEAVY-DUTY AIR HANDLING

- **High efficiency over a broad range of operation** — ideal for supplying ventilation and air conditioning systems.
- **Stable performance** over the entire range of operation — dependable delivery.
- **Handles pressures up to and including Class IV applications.**
- **Capacities up to 500,000 cfm** and over — in closely graduated sizes to permit exact selection for the job.

"Q" Factor* Features Available Only in Buffalo Designs

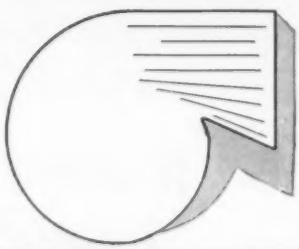


EFFICIENCY AT INLET

Cross-section of inlet, showing smooth half-circle passage into wheel formed by curved inlet bell and mating wheel flange. There are no flat spots to cause turbulence.

EFFICIENCY IN THE WHEEL

Showing deep, backward curve of blades in "BLH" wheel for smooth, quiet handling of air spun into the wheel in the direction of rotation. No waste turbulence.



EFFICIENCY THRU THE HOUSING

Not only is the "BLH" housing streamlined throughout, but its unique fared outlet delivers air to discharge duct with easy, gradual enlargement for best distribution and static conversion.

Write for new Bulletin F-201 for full details.

**The "Q" Factor — the built-in Quality which provides trouble-free satisfaction and long life.*

AIR HANDLING DIVISION

BUFFALO FORGE COMPANY

Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

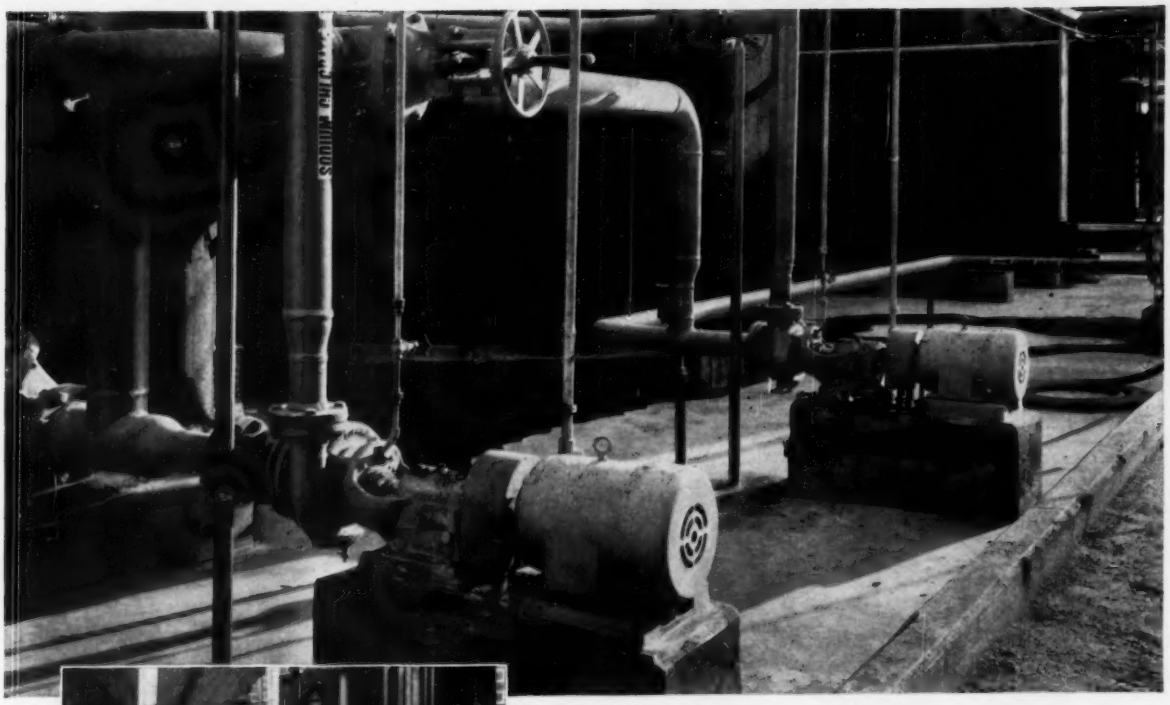
"Buffalo"

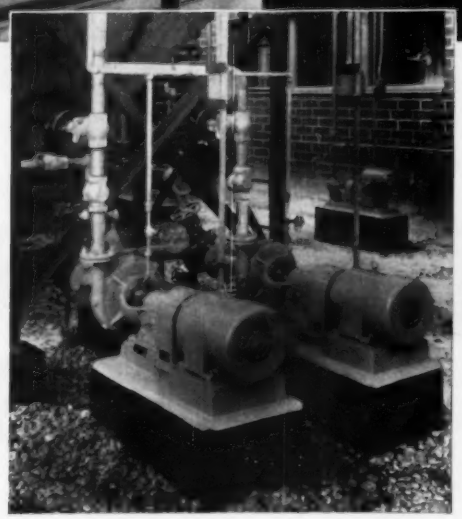
'Buffalo' Air Handling Equipment to move, heat, cool, dehumidify and clean air and other gases.

'Buffalo' Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.

'Buffalo' Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.

Squier Machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.





Above — "Buffalo" Single Suction Full Ball Bearing Pumps, stainless steel construction, handling sodium chlorate.

CORROSION— CONTAMINATION CONTROLLED WITH "BUFFALO" PUMPS

At left — "Buffalo" Single Suction Pumps of stainless steel construction handling hydrogen peroxide bleach.

Using a wide range of materials of construction, "Buffalo" offers a line of pumps capable of handling your toughest liquid moving job. You can order a "Buffalo" pump made of Hastelloy B or C, nickel, bronze, lead, stainless, in fact just about any material that can be cast and machined.

Properly applied, these pumps can cut your liquid moving costs, reduce down-time due to pump failure and improve quality control where contamination may be a factor.

For your tough liquid moving jobs, phone or write your "Buffalo" Engineering Representative or write direct. Tell us the liquid you want to pump and we will be pleased to suggest the best material of construction for the job.

"Buffalo" PUMPS

BUFFALO PUMPS DIVISION

BUFFALO FORGE COMPANY

Buffalo, New York

Canada Pumps Ltd., Kitchener, Ontario

'Buffalo' Air Handling Equipment to move, heat, cool, dehumidify and clean air and other gases.

'Buffalo' Machine Tools to drill, punch, shear, bend, slit, notch and cope for production or plant maintenance.

'Buffalo' Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.

Squier Machinery to process sugar cane, coffee and rice. Special processing machinery for chemicals.

the beauty of new

FIBERGLASS REINFORCED PLASTICS

they

ELIMINATE CORROSION

In . . . Slasher Hoods & Ducts
Dyeing Range Hoods & Ducts
Drying Range Hoods & Ducts

In . . . Cloth Boxes, Scrays
Yarn Conditioning Boxes
Filling Boxes, J-Boxes

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THE TERRELL MACHINE COMPANY, INC. CHARLOTTE, N. C.

NEWS IN BRIEF

Locking the Barn Door . . . Calling for some sort of central intelligence agency to give tariff people advance notice of the likelihood that an industry will need

protection from imports, National Association of Hosiery Manufacturers reports that this is the present state of affairs: Industry tells the Government, "If things stay this way long we're sure going to get killed." The Government replies, "Have you been killed yet?" Industry says, "No." So the Government tells Industry, "When you are, let us know, and we'll see what we can do."

"Too Much Textiles"—ACMI. There is a surplus of textile manufacturing capacity throughout the world, said the board of directors of the American Cotton Manufacturers Institute at a recent meeting, calling on the Federal Government to establish policies and procedures which would ease present conditions facing American textile manufacturers. The board passed a resolution which said, "ACMI, recognizing the possibility that the Foreign Aid Program in Latin America and Africa may shortly be enlarged substantially, directs the attention of government authorities to the fact that already there is a surplus of textile manufacturing capacity in the world as a whole and urges that industrial development in those areas be directed away from textile manufacturing."

Cotton Quotas. Agriculture Secretary Benson has proclaimed a national marketing quota of 15,562,000 bales of 500 lb gross weight and a national allotment of 18,398,424 acres for the 1961 crop of upland cotton. Figures for extra long staple cotton are 66,590 bales and 63,740 acres. Cotton farmers will vote on the quotas on December 13, with a two-thirds vote of approval necessary to make them effective.

N. C. State Enrollment Up. Freshman enrollment in the School of Textiles at N. C. State College represents a 100% increase over

Labor-Management News

Sues Union. Reverie Lingerie, Inc., has filed a civil suit in Orange County, N. C., asking $1,768,000 damages from International Ladies

Garment Workers Union and four defendants recently convicted in the burning of the firm's Hillsboro, N. C., plant about three years ago.

Raise at Finishing Plant. The 625 employees of Bradford (R.I.) Dyeing Association have received a 5-cent hourly wage hike after a one-day strike. The plant has a contract with Textile Workers Union of America, which said that the wage raise established the pattern for New England dyeing and finishing plants. (850 dyeing and finishing plant workers in the Fall River, Mass., area got a 5-cent raise effective October 1.)

Union Pulls Out. The Textile Workers Union of America has withdrawn from an election scheduled to be conducted by the National Labor Relations Board at Georgia Rug Mill, Summerville, Ga. NLRB allowed the withdrawal "with prejudice," therefore the union can not file another election petition for six months.

Unions Rejected. Employees of Singer - Cobble, Inc. (formerly Cobble Brothers Machinery Co., Inc.), Chattanooga, Tenn., overwhelmingly rejected union repre-

sentation in an election recently conducted by the National Labor Relations Board. Two unions were attempting to organize the plant. The company produces tufting machinery.

NEW

1961 Beechcrafts

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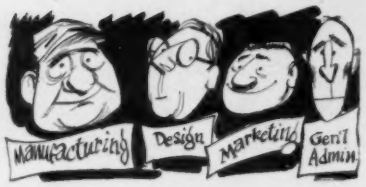
Beechcraft AIRFLEET OF THE TEXTILE INDUSTRY

last year—148 compared with 74. Total enrollment is now 435, up 24% over last year. The student body includes 47 students from 17 foreign countries, and 48 students from 11 states other than North Carolina.

Auburn Enrollment. The School of Textile Engineering, Auburn (Ala.) University, began the current school year with 109 students, 33 of whom were freshmen.

Big Potential for Uniconer. A market potential of more than $100 million is seen for Leesona Corp.'s automatic cone winder, the Uniconer, by Robert Leeson, president of the firm. He recently told a meeting of the New York Society of Security Analysts that this estimate is based on an anticipated demand for 200,000 to 300,000 Uniconer spindles, 50% of which are expected to be sold abroad. The largest size Uniconer will have 96 spindles, and its price is expected to be in the $50,000-$60,000 range. Initial shipments are scheduled for late 1961.

How Many People Are Enough? Wide variations in the number of persons employed to perform virtually identical functions in industry are revealed through a nation-wide study of 88 repre-



sentative corporations released by the American Management Association. Variations are illustrated by these figures:

Function	High %	Low %	Avg %
Manufacturing	71.5	45.0	59.7
Design, R & D	26.6	3.9	14.7
Marketing	24.1	3.5	11.9
General Admin.	14.0	8.7	10.6

AMA reports that economies effected since preliminary figures became available range from $36,000 a year for a single operation in one company to more than $1

The problem of foreign competition

■ To MOST of us foreign competition is merely a term, and to a large number of us it is all to the good because we get a selection of articles that would not otherwise be possible. But to thousands of business firms in this nation today foreign competition is hurting profits and in many instances it is threatening the very existence of the organization.

Now American business believes in competition, and since 1890 we have had a federal law prohibiting monopoly. Why the growing concern about foreign competition? The answer is to be found in the difference between domestic and foreign competition.

In the domestic field, every business works under the same general conditions. Its raw material costs the same, it draws on the same labor supply, it pays the same transportation charges and, in general, the same rate of taxes, it has the same freedom to devise articles which will appeal to the taste of its customers, it can advertise to any extent it can afford, and its market is identical with that of its competitors. In the case of foreign competition we find the following:

1. Wages are lower. This is true in every nation, even if one counts the fringe benefits. Taxes on business also are lower as a general rule. Raw materials may cost more or less, and administrative expenses may be either higher or lower, but usually are lower. Even though output per man-hour is less than in this country, therefore, the total cost of production is less in most instances.

2. Foreign factories have been largely rebuilt in the past few years. This means that they have just as modern and efficient machines as we have and can, if they so desire, turn out just as good a product. In many lines, the foreign factories are even more modern on the average than ours—in spite of the enormous investment we have been making in plant and equipment.

3. Foreign governments, with few exceptions, actively help and support exports. In some cases this is through outright and direct subsidies, and in most cases the government guarantees the exporting company against various kinds of loss. Foreign governments also make constant surveys of our market, arrange fairs and so forth, all of which are designed to be of specific aid to their exporters. Our government does practically nothing along these lines, although it is moving in this direction but moving very slowly.

4. In most foreign nations it is a matter of exporting to survive. Until the past two or three years, as a result of the war devastation, they did not have a surplus which they could ship abroad, but now they have increased their production in many lines to a volume which gives them a substantial supply for export. And the widespread over-devaluation of their currencies in 1949 and immediately thereafter has given them a competitive advantage as of today.

In spite of all these favorable factors we still are exporting more goods than we import, and this year our exports are increasing more rapidly than our imports. This is quite amazing because in many foreign nations there are tariffs and other restrictions against our goods. In some cases these restrictions are so severe that American companies are establishing foreign branches or subsidiaries in order to be able to sell at all in the market.

Unfortunately the severity of the foreign competition is creating a demand in many quarters for us to raise tariffs. In some instances that may be desirable, or even necessary. But the only sound, real answer is for us to increase our productive efficiency—and sell more abroad.—*Ralph Robey in* NAM News, *published by the National Association of Manufacturers.*

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Give You Sturdy, Economical Protection

Bemis is also your top source for nearly all other types and sizes of packaging for the textile industry ... for example:

Burlap Tite-Fit Tubing *

Sturdy paper covers for textile rolls and carpets *

Merchandisable Flip-Close® and other fast-selling poly packages for soft goods *

Soft-finish cotton threads and twines; also burlap piece goods

Ask for the complete story about the help Bemis can give you.

* Bemis developed these. It's natural we know how to make them better.

Bemis

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Sales Offices in Principal Cities

million by another. Textile firms included in the study were Huyck Corp., Mohasco Industries, Inc., and American Thread Co.

Carpet Sales Near Record. The U. S. carpet industry will ring up its second biggest year on record by the end of 1960, the American Carpet Institute estimates. Projecting current figures,

Institute officials predict that broadloom shipments will total 132 million sq yd by the end of December, about 8% below last year's all-time record. Tufted carpets this year accounted for about 63% of total production, with woven and knitted yardage making up the rest. Wool accounted for about 66% of fiber consumed in carpets, nylon and acrylic fibers 20%, rayon and acetate 10%, and cotton 4%. Carpet imports for 1960 are expected to exceed 9.3 million sq yd—an all-time high.

Vice-President Richard M. Nixon receives an all-wool blanket with an unusual design showing the map of the United States, from Miss Wool of America, Patti Jo Shaw. Senator Gordon Allott (R., Colo.) looks on at left. The fifty states are outlined in fifty different patterns, denoting that wool is grown in each of the United States.

Materials Handling Course. Georgia Tech's 1961 Materials Handling Short Course will be held February 2-4 at the Price Gilbert Library on the Tech Campus in Atlanta. The course will stress the engineering fundamentals of materials handling. Details and application forms are available from the school.

Merchandising Notes

Artloom Carpet Co. has established a contract carpet division, featuring the "Quick-Service Custom Contract Plan." It allows customers such as architects, decorators, and dealers to obtain made-to-order carpeting based on any combination of five styles, nine qualities, and an unlimited variety of colors, with width specified to the inch.

Bates Mfg. Co. is offering hand screen printed sheets in fitted and flat sizes to fit odd-sized beds.

Beacon Mfg. Co. is marketing blankets of Fiber Sealed Orlon acrylic fiber, called "Four Poster."

Callaway Mills Co. has introduced towels made of a blend of cotton and Avril rayon. Pile yarn is 65% cotton, 35% Avril; ground warp is 75% cotton, 25% Avril.

Cannon Mills, Inc., is now making all of its Type 180 sheets and pillowcases in a pima cotton blend at no increase in price.

Collins & Aikman Corp. is pioneering in a new field—tufted apparel fabrics. The company has introduced a fabric with a 100% Creslan acrylic fiber pile, tufted on a woven ground fabric. The fabric is intended as a pile liner or for outerwear.

Du Pont Co. reports on the basis of a consumer survey that the popularity of resin-treated cotton fabrics in men's wash-and-wear dress shirts has reached a plateau, while blends of Dacron polyester fiber and cotton show signs of continued growth.

Fort Schuyler Knitting Mills has introduced women's underwear in a thermal stitch; fabric is 75% cotton, 25% Dynel modacrylic fiber.

Lee Dyeing Co. has adopted the trademark "Satinage" for its calendering process for satin-finished tricot fabrics.

Madras Council has been formed in the U.S. to represent the interests of the Indian Madras industry.

Owens-Corning Fiberglas Corp. has developed a one-piece, snap-in ceiling of Fiberglas fabric and insulation for use in the 1961 line of Rambler cars.

Pepperell Mfg. Co. has introduced the "Lady Pepperell Classic," a blanket of 100% Creslan acrylic fiber.

Wool Bureau's main target for its men's wear promotional campaign for spring and summer, 1961, will be all-wool tropical worsted suits with permanently creased trousers.

. . . and no C & K Loom part is designed, except to fit in most efficiently as part of the whole . . . only the maker of the whole loom has this point of view when designing and producing a loom part . . . it follows that a replacement part had best come from the loom maker, who has his own business at stake in the year after year efficient performance of his product.

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Manufacturers of the world's Longest Line of Automatic Box Looms

CROMPTON & KNOWLES CORPORATION C&K WORCESTER, MASS. U.S.A.

RECENT TECHNICAL AND COMMERCIAL DEVELOPMENTS

by J. B. Goldberg
Consultant to the Textile and Allied Industries
Exclusive

FIBERS AND YARNS

Nylon Carpet Staple. Du Pont is now offering Type 501 carpet nylon in staple and tow form for use in cut-pile carpets. The new fiber is expected to broaden styling.

Paper and Nonwovens. A short, multicell rayon fiber, "RD-101," has been introduced by American Viscose Corp. for the manufacture of paper and wet-laid nonwoven fabrics. Claim that paper can be made from it without necessity for working the fiber, or adding pulps, fillers, or bonding agents other than water to form a slurry.

More Rigid Glass Fiber. New high-modulus glass fiber with about 50% greater rigidity at no sacrifice in strength has been developed for the U. S. Air Force by Owens-Corning Fiberglas Corp. Use is expected where increased stiffness in reinforced plastics is required.

Monofilament Teflon. Du Pont has announced availability of experimental quantities of Teflon TFE-fluorocarbon fiber in 250- and 1200-denier monofilaments; fiber was previously available only in multifilament and staple form.

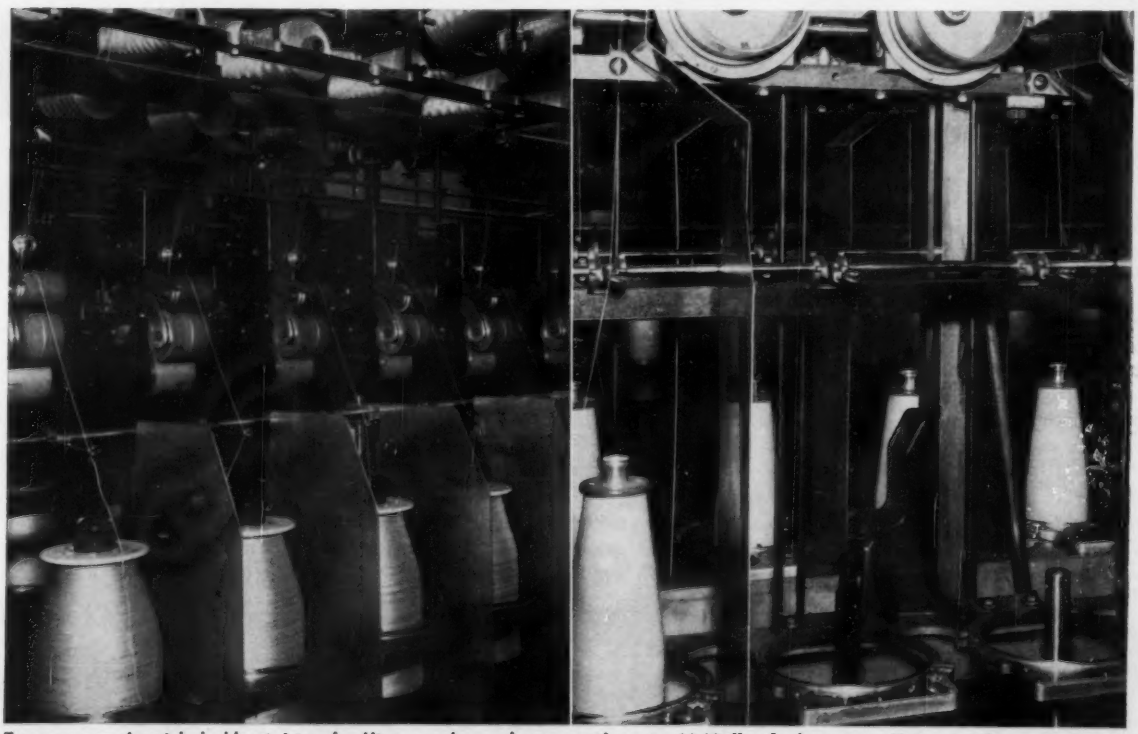
Shrinkable Cellulosic Filament. Process for making a shrinkable cellulosic filament yarn by modifications of the spinning bath and subsequent operations is described in a patent recently issued to a North African company.

Dyeable Polyolefin Fibers. An Australian patent application has been filed by Montecatini for a process to make polyolefin fibers more dyeable by incorporating polyalkylimines in the molten polyolefin before extrusion.

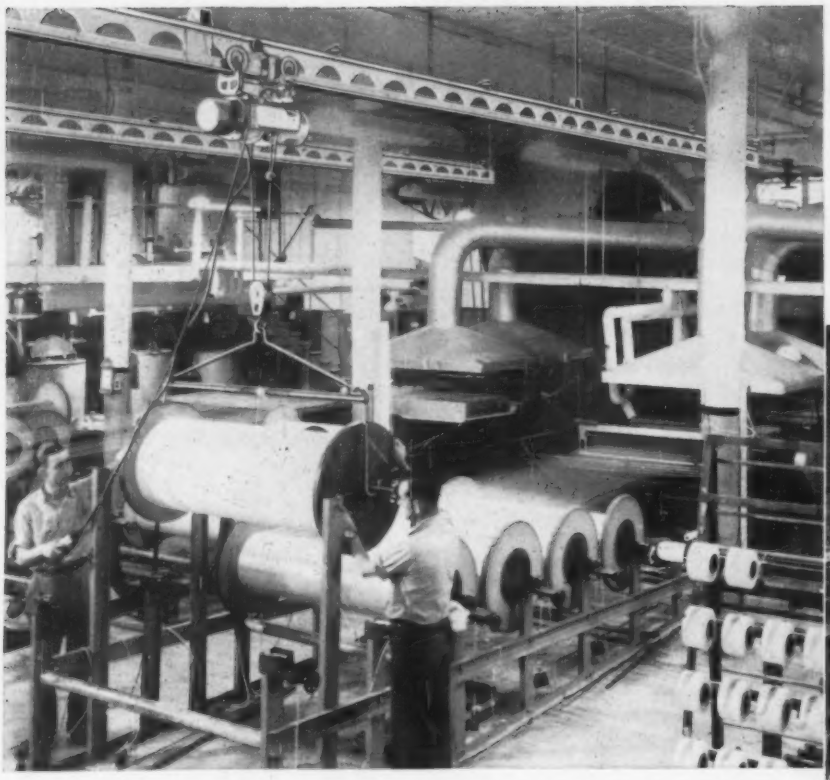
Japanese Man-Made Fibers. Modified fiber made by graft polymerization of acrylonitrile and rayon is said to be identified as "Lonbell." Similar product developed by another company is called "N Fiber."

MACHINERY AND PROCESSES

New Automatic Doffer. The Bahnson Co., Winston-Salem, N. C., has exhibited a film demonstrating a new portable automatic spinning frame doffer ("Doff-O-Matic") with the claim that it is the most compact of any currently being made. The unit is also suitable for warp spinning bob-

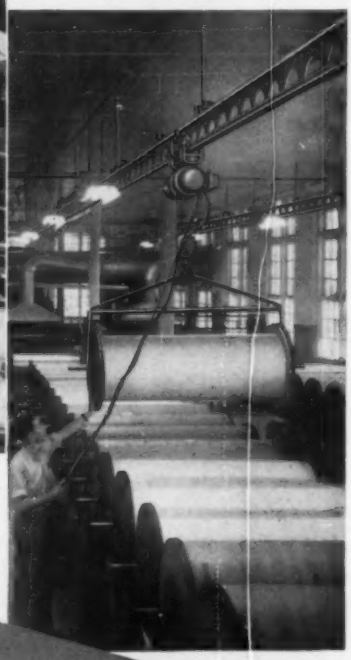


Two new experimental doubler twisters by Utex are shown above. Each has a new ring rail lifting mechanism which makes long traverses possible. Unit at left can traverse a package up to 12" long, which will hold up to 6 lb of most continuous filament yarns, and up to 11-12 lb of glass yarns. Unit at right was especially designed for glass yarns; it will traverse a package up to 14" long. Latter has variable speed unit with timing belts to provide a 9-1 twist change ratio which can be simply dialed to the desired twist.



The Tramrail system permits handling beams from warp beam storage to slasher and thence to loom beam storage, entirely by the overhead route. Travel from point to point is direct; no manual lifting or rehandling.

Beams are easily handled in and out of the warp beam storage. The four double-deck racks accommodate a total of 176 beams.



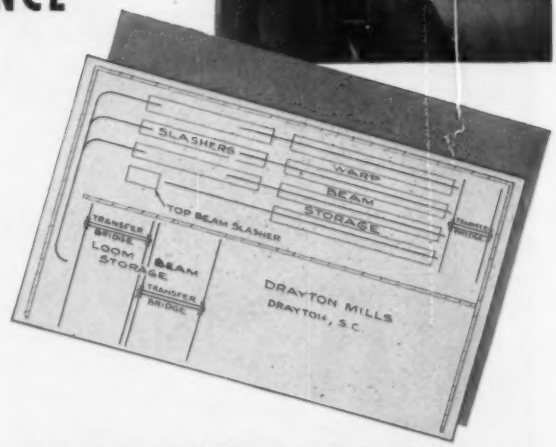
BEAM HANDLING SYSTEM PROVIDES SAFETY and CONVENIENCE

A simple hand-propelled Cleveland Tramrail System handles all beams in and out of the warp beam storage and into the slashers at the Drayton Mills, Spartanburg, S. C.

A Tramrail carrier travels on a transfer bridge and on four tracks over the beam storage racks. The bridge may be interlocked with any of the tracks, enabling overhead delivery of any beam to any slasher.

Loom beams are taken directly from the slashers to a large storage section by a manually operated Tramrail carrier which can be run onto either of two interlocking transfer bridges there.

The Tramrail system makes beam handling easy and enables orderliness and greater efficiency.



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CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

bins. Average doffing time is estimated to be 100-200 bobbins per minute on a single side of the frame.

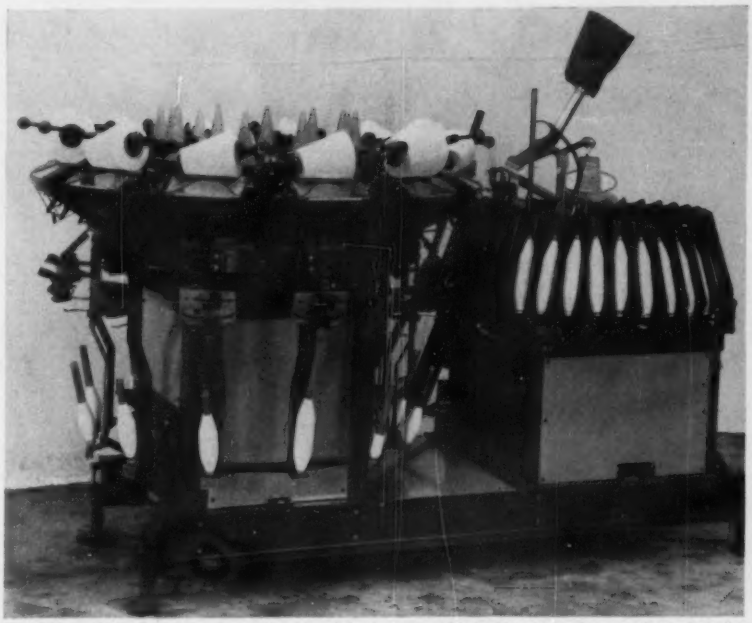
Spinning Controls. Two new controls for spinning, now in the developmental stage, have been exhibited by Adams, Inc.: Adamsignal checks ends down automatically, without contacting the yarn, and signals after a predetermined number; Adamstop for spinning automatically cuts off the roving after an end is down, with the cutoff operating independently for each end.

New Printing Cylinders. "Colorcade" process cylinders for textile printing introduced by ABC Photo-Gravure Supply Corp. are based on classical rotogravure; design is separated into close-lying color cells of equal size but varying depth according to tone values of design.

Loom Cleaner Improved. The "Uniqlone" vacuum lint collector for looms, shown in prototype form by American Moistening Co. at the American Textile Machinery Exhibition as a device for removing shed from beneath drop wires, has been modified to keep the front of the loom (under lay and fell of cloth) clean. It is scheduled to be tested soon at a southern mill.

Producing Nonwovens. The Du Pont Co. has announced development of a new method for the manufacture of nonwoven fabrics on paper-making equipment, using new synthetic fibrous particles. These particles, given the generic name of "fibrids" by Du Pont, can be made of polymers of various types, prepared in suspension form. Combination with existing fibers on papermaking machinery permits the production of a wide variety of nonwoven structures designated as "textryl," also a generic name proposed by Du Pont. Control of the finished product is effected by use of heat with or without pressure, depending on the texture or surface desired.

Experimental Spinning Machine. Available for the experimental spinning of man-made fibers is a new small model machine which can utilize as little as 25 grams or as much as 200 grams of polymer for evaluation purposes. Spinning speeds may be varied from 500 to 1500 yards per minute. Either monofilament or multifilament yarns may be spun and draw ratios are readily adjustable.



Experimental automatic cone winder, Model 12-K, by Abbott Machine Co., is claimed to be efficient for both large and small lots. If end breaks because of a slub, it is automatically retied; if yarn runs out or breaks on the bobbin, a new bobbin is tied in. Winding unit makes cycle in one minute. Automatic doffer is under development.

Making Full-Fashioned Garments. Introduced by an English inventor, a new automatic knitting machine is expected to be offered in England late in 1961. Featured are provisions for operating eight machines with electronic controls permitting supervision by a single operator to turn out over 1,000 full-fashioned garments per week on three shifts. All garment parts can be knitted on the same machine without requiring skilled operators and it is claimed that operations can be carried out by use of perforated tapes which will control instructions as first prepared from sketched designs.

Knitting Process for Carpets. Under development by an English concern is a method for the manufacture of knitted pile carpeting. A fleece is supplied in the form of a card web and attached to the ground fabric during knitting. The webforming machine and Raschel knitting machine are linked together by means of a conveying unit.

FABRICS AND FINISHES

New Wash-Wear Finish. Courtaulds (Ala.) has developed a new permanent, nonresin wash-wear finish for rayon fabrics, identified as "Prestwick." Early production has been confined to 100% spun rayon fabrics, but the process is also expected to be applicable to fabrics of cotton, continuous filament rayon, and newer man-made fibers and blends. Licensing agreement is being made available to dyers and finishers.

Glass Automotive Headliners. An Ohio concern is reported to be producing a one-piece laminated glass fiber acoustical headliner developed for the automotive trade. The self-supporting product comprised of glass fiber and phenolic compound is molded to the automobile top, serving as both insulating and decorative materials.

Acrylic Finish for Backing. Licensing agreements have been made in several countries for use of a new acrylic finish for fabric

Continued on page 127

You're looking at crystals of Sterling TNA-5 Reagent.. the reagent that produces clear, brilliant colors in neutral or alkaline dyebaths . . . the reagent that's unexcelled for dyeing cotton,rayon or any blend of these fibers with wool . . . the reagent that improves color quality when used with direct, sulphur or naphthol dyes. Sterling TNA-5 is *more than 99.9% pure*, free of calcium or magnesium impurities that can cause "salt streaks" or uneven shades. An International Salt Company representative will show you how TNA-5 can save money on dyestuffs and improve results in *your* dyehouse. He is experienced in the use of TNA-5, either dry or as brine, and can furnish plans for a TNA-5 dissolver to suit your needs. Contact district office nearest you.

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EXECUTIVE VIEWS

Prepared by a man who is closely identified with the textile industry.

Put it in writing!

When company policies are spelled out, misunderstandings don't arise

TEXTILE plants, small and large, should have written policies which clearly and concisely state the company's settled course of action in a given situation. It is important to supervisors and employees alike to know that when a particular circumstance arises in one department that it will be handled in the same manner that it would in any other department in the mill.

The need for a written and established set of rules was clearly demonstrated in a supervisors' meeting in a medium-sized cotton mill very recently. The question came up as to how to pay an employee who had been injured on the job and was not able to return to work that day. This would not appear to be a very involved question, especially to those who have these things already spelled out. However, in this particular case there were three different answers given by supervisors in different departments.

One department would pay the employee for that time worked up to the time of the accident. Another department's policy was to pay the employee for a full eight hours, provided the accident occurred after a certain number of hours had been worked. Finally, a third department would pay the injured employee for a full day's work regardless of how far along the shift the injury happened.

Certainly here was a situation that needed a definite rule to follow, since it was something that had come up many times in the past and would continue to come up as long as the plant operated in the future.

OFTEN the Company Policy Manual is written from the executive level and contains very general, very broad statements which are important from the top level management point of view but which neglect the problems of the lower supervisory level. Policies that are vague and general and do not make definite statements might just as well never have been written.

On the other hand, a policy manual can not cover every unusual state of affairs which might conceivably develop in an organization. It would be a mistake to attempt to do so, for having too rigid a set of policies can be as bad as having none at all, if it hamstrings supervisors so that they feel that it is not possible for them to use their own judgment in dealing with individual cases.

In writing policies to cover the employee relation field, the language used should be direct and uncomplicated—the same understandable language that would be used on a bulletin board notice to employees. This is not to imply that it be expressed in kindergarten terms, of course, but avoiding a corporation lawyer's style and legal terminology will prevent misunderstandings.

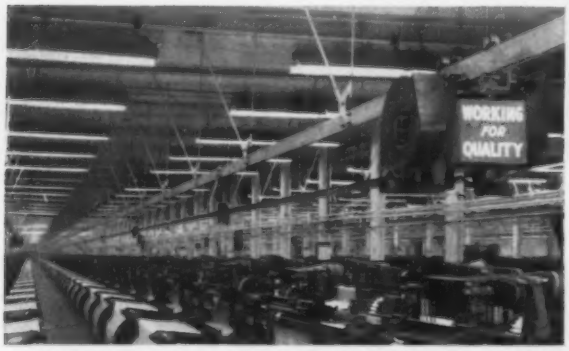
What are some of the things that should be defined by this set of written laws? Mainly, the manual should be developed around the repetitive situations which arise in the employee relationship field. Some of these are given below:

1. The hiring and separating procedure (define employee qualifications and special qualifications)
2. Employee training and instruction
3. Wage practices and incentive pay
4. Policies with respect to holi-

Now...keep your work areas clean automatically, with specially designed Amco Cleaners!

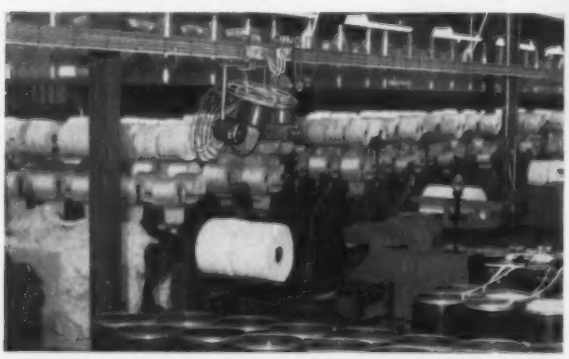
Amco has developed a wide selection of automatic cleaning equipment . . . designed to cut down manual cleaning, improve quality, and step up mill production.

For money-saving facts about Amco Cleaners, call American Moistening Company — an organization with more than 70 years' experience serving the textile field.

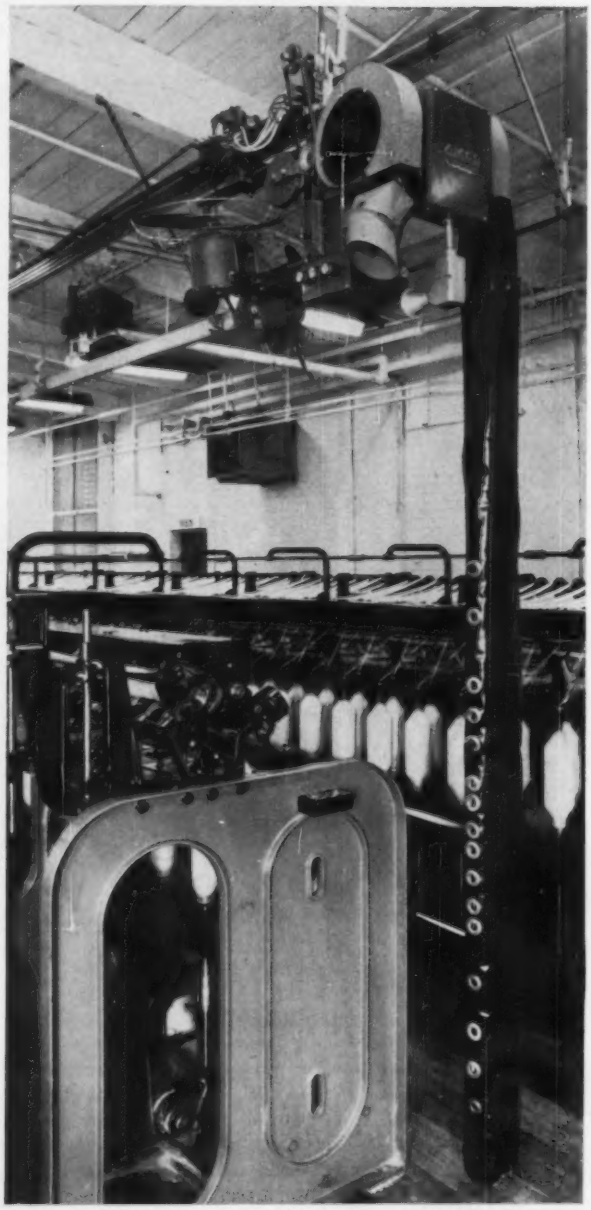


Helicone Loom Cleaners improve quality of fabrics by preventing waste accumulation on stop motions, drop wires, harnesses and reed caps.

Amco Loom Cleaners over Draper shuttleless looms. Sheeting is being woven at high relative humidity.



Amco Ceiling Cleaner provides automatic cleaning of ceiling, beams, walls and other surfaces. Excellent for card room areas.



Amco's electronically controlled Roving Frame and Ceiling Cleaner. Air delivery boot takes care of specific lint-collecting trouble spots.

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days, vacations, time-and-a-half pay, bonuses, reporting pay, third-shift premiums, etc.

5. Promotions
6. Transfers
7. Brief outline of insurance plans
8. Leaves of absence
9. Prolonged illnesses
10. Military service
11. Lay-offs
12. Garnishments
13. Retirement
14. Rules of conduct and disciplinary action

These are, of course, only a few of the items which could be covered in a policy manual.

IN DEVELOPING a manual it is also desirable to include such interesting facts as the history of the company, its relative size, and something of what the final product is and some of the end uses. A floor plan or plant layout with dimensions would be most helpful, especially where the plant is one of a chain of plants which are separated geographically by many miles or even by several states, and the individual plant policies are combined in one volume.

A plant policy manual must also cover other important considerations apart from employee relations. Wise management will want everyone to understand thoroughly just how customer complaints are to be handled, and just as clearly to understand the policy with respect to competitors.

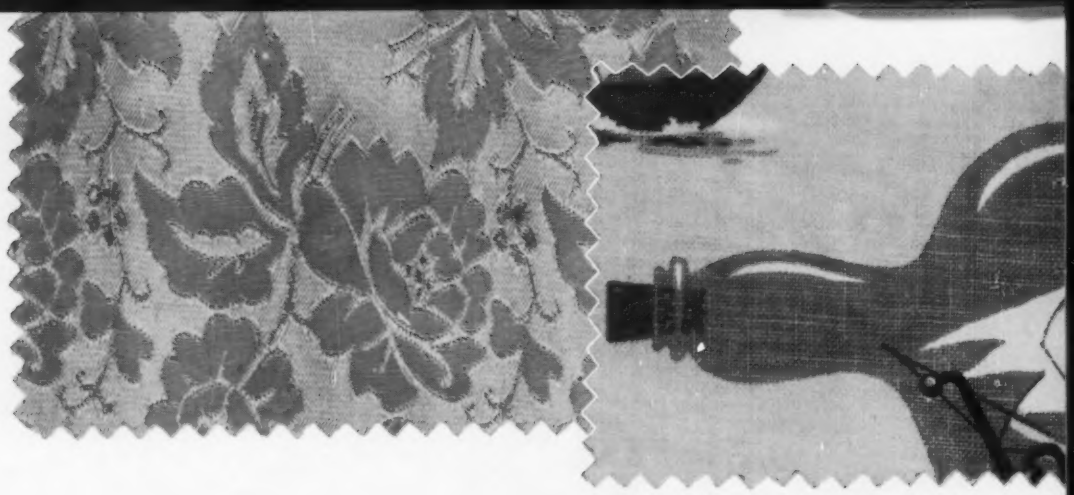
Purchasing should receive careful attention as well, and a flow chart of the supply order procedure will improve this presentation.

Management will also insist that the functions of the various departments be spelled out in detail. The general policy with respect to plant maintenance and machinery maintenance and replacement should be included also, but items of this nature must be more flexible than some of the other topics, since it would not be desirable to establish an iron-clad rule governing, for example, when a machine should be replaced.

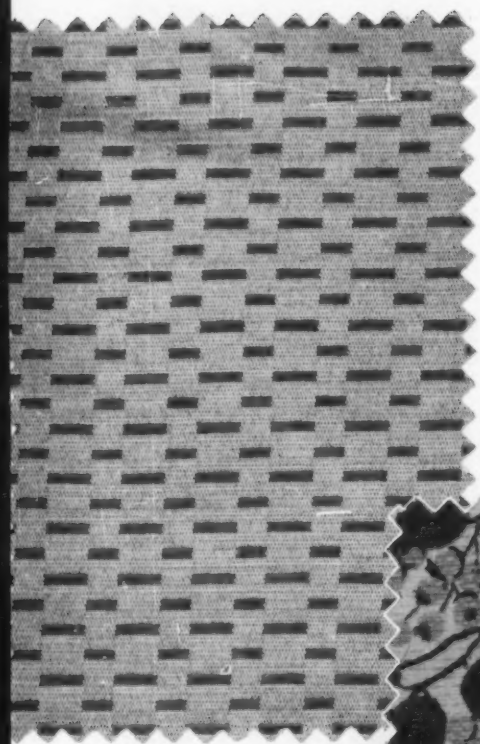
When the policy manual is finally completed, approved, and distributed it should be a valuable guide to the supervisor in his dealings with his employees; a standard that the personnel director uses in the hiring and separating of employees; a valuable aid to various departments, such as purchasing, accounting, supply, etc.; and a general plan of action or procedure that top management can go by in making important decisions.

FUTURE EVENTS

Date		Event	Location
Dec.	2	Rhode Island Section, AATCC, annual meeting	Johnson's Hummocks Providence, R. I.
	2	Western New England Section, AATCC	Rapp's Restaurant Shelton, Conn.
	3	Southeastern Section, AATCC	Atlanta Athletic Club Atlanta, Ga.
	9	Delaware Valley Section, AATCC	Philadelphia, Pa.
	9	Northern New England Section, AATCC	Colonial Country Club Lynnfield, Mass.
	9	South Central Section, AATCC	Hotel Patten Chattanooga, Tenn.
		1961	
Jan.	20	Metropolitan Section AATCC	Hotel New Yorker New York City
	21	Piedmont Section AATCC	Poinsett Hotel Greenville, S. C.
Feb.	7-9	Canadian Textile Conference	Queen Elizabeth Hotel Montreal, Canada
	8	American Association for Textile Technology annual meeting	Hotel Commodore New York City
Mar.	16-17	ASME Textile Engineering Conference	Clemson College Clemson, S. C.
	23-25	American Cotton Manufacturers Institute annual meeting	Fontainebleau Hotel Miami Beach, Fla.
April	7	Niagara Frontier Section AATCC joint meeting with Ontario Section CATCC	St. Catherines, Ont.
	12-14	Alabama Textile Manufacturers Association annual meeting	Buena Vista Hotel Biloxi, Miss.
	16-18	Narrow Fabrics Institute, Inc., meeting	The Tides Inn Irvington, Va.
	18-19	Institute of Textile Technology technical advisory committee and board of trustees meeting	I.T.T. Charlottesville, Va.
	19-21	Southeastern Regional ISA Conference and Instrument Exhibit	Park Center Charlotte, N. C.
	24-28	Knitting Arts Exhibition	The Auditorium Atlantic City, N. J.
	24-25	Underwear Institute annual meeting	Hotel Dennis Atlantic City, N. J.
	26-29	Georgia Textile Manufacturers Association annual meeting	Hollywood Beach Hotel Hollywood, Fla.
May	6	Alabama Textile Operating Executives slashing and weaving discussion	Thach Auditorium Auburn, Ala.
Sept.	28-30	AATCC national convention	Hotel Statler Buffalo, N. Y.
Oct.	11-21	International Knitting Machinery and Accessories Exhibition	Belle Vue Hall Manchester, England



Variety's
your challenge.....



Tomorrow's markets will belong to the mills that have prepared for them today. UNIFIL® Loom Winders are giving modern mills a market-oriented advantage.

UNIFIL Loom Winders enable weave rooms to use a wide variety of filling yarns; natural and man-made; spun, filament and textured. The single shuttle weave room can switch filling yarns from one count to another, from one fabric to another as quickly as fashion trends change — *and at no extra cost.*

While insuring against market demand variances, UNIFIL Loom Winders drastically reduce inventory and production planning, work scheduling and employee training. These savings and the inherent operating economies of UNIFIL are the major factors in purchasing decisions.

UNIFIL's unmatched versatility meets today's needs and tomorrow's markets. It allows mills to wind from any filling supply *economically.* Quills are wound and shuttles loaded, empty quills stripped and returned for rewinding — *all automatically at the loom!*

Investigate UNIFIL for greater versatility and economy. Learn the reasons why leading textile mills consistently reorder UNIFIL Loom Winders. Call your nearest Leesona Sales Engineer — in Boston, Philadelphia, Charlotte, Atlanta or Los Angeles. Or write LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island. Keep pace with your market with UNIFIL.

..... meet it with *Versatility!*

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DOVER MILL group
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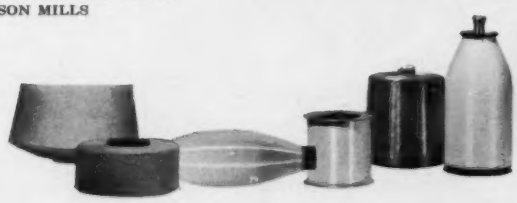
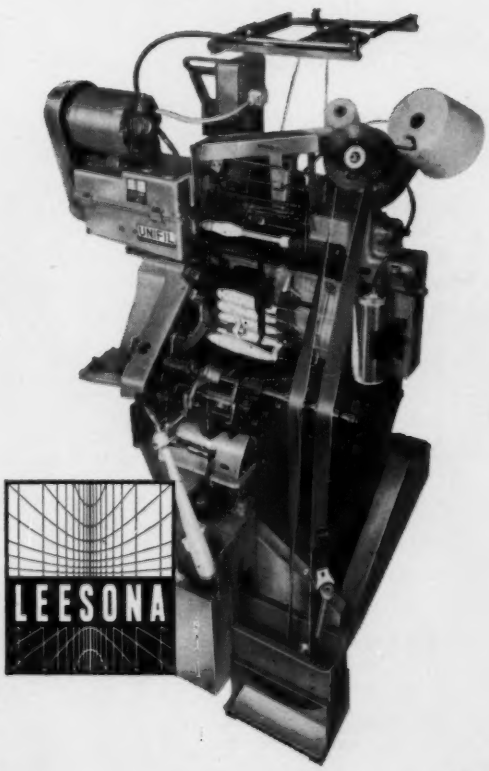
STRASBURG TEXTILE MILLS
TALLASSEE MILLS
UNITED MERCHANTS & MANUFACTURERS, INC.
WOODSIDE MILLS





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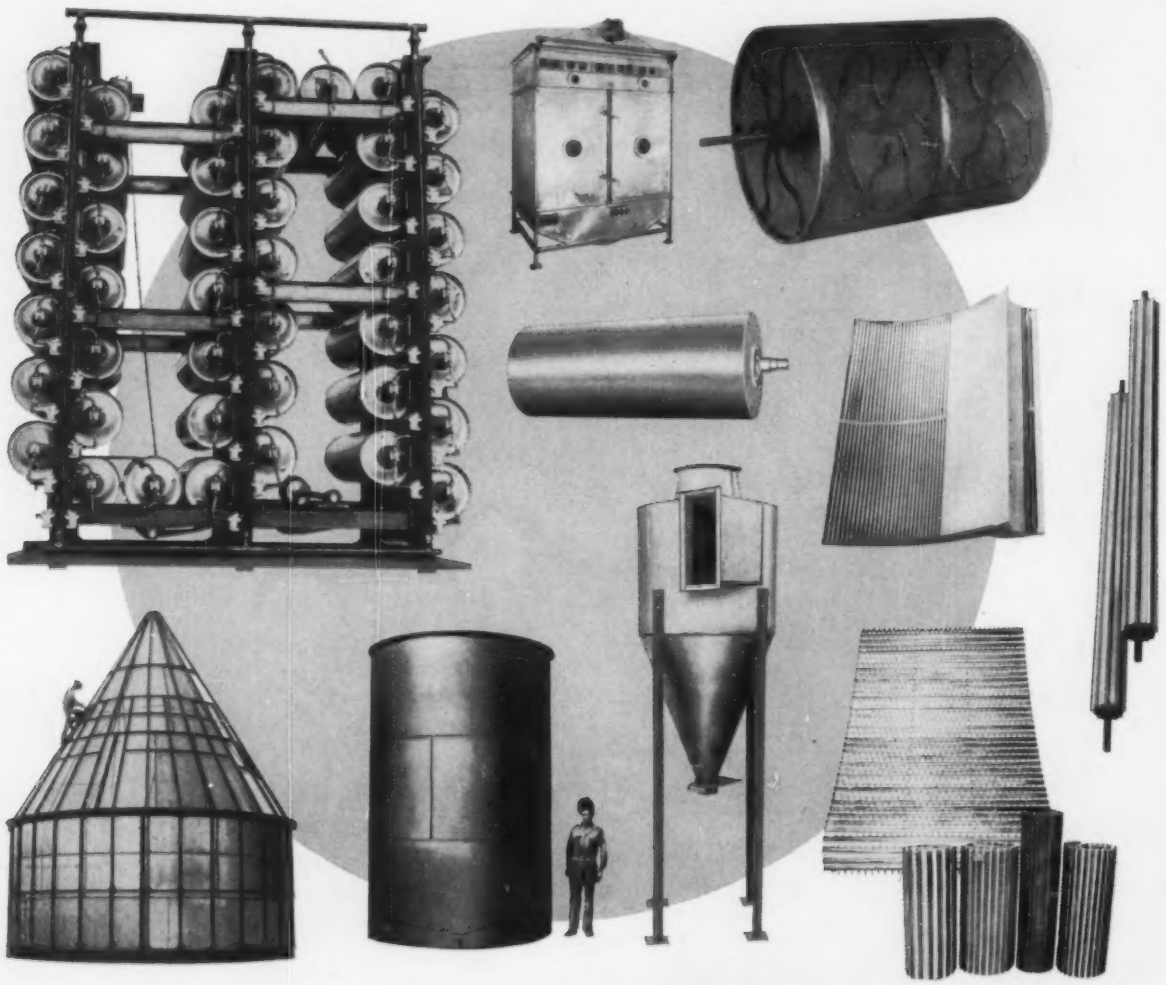
As "custom tailors" of stainless steel, Sims' recommendations, designs, and fabrications are dictated by your particular problem, need, requirement or application of equipment. And, Sims specialists are on the job from start to finish to assure meticulous attention to even the smallest detail... the craftsmanship that unconditionally guarantees that the finished product will meet and surpass your most exacting specifications.

rolls · vessels · kettles · coils · size boxes · linings · cylinders · machinery · air and material handling systems . . . for textile · chemical · food processing · pulp-paper and other industries



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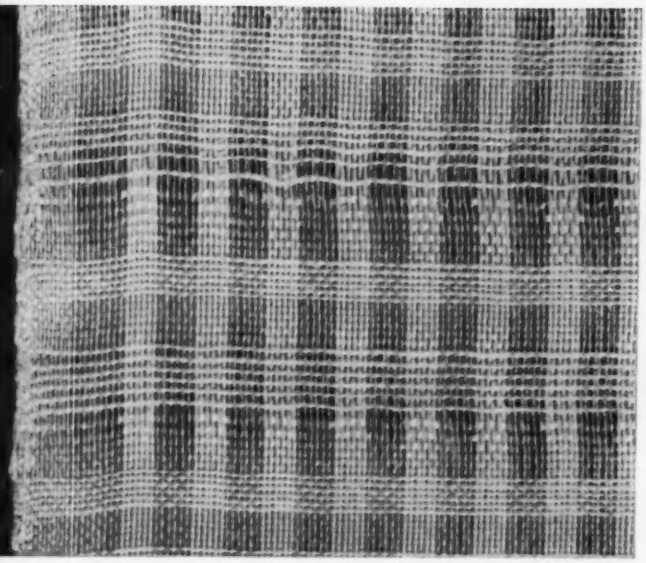
Textile Industries
FOR DECEMBER 1960



Faulty temples may leave costly marks over face of sheer fabric.

Trouble shooting temple rolls pays off

by Virgil Boyd — Exclusive

ONCE THE TEMPLE ROLL best suited for a particular job is selected, there are several danger points to be guarded against, as they may prove costly . . .

The temple roll, like any other machined part, should be accurate in all dimensions. And this accuracy should begin with the core.

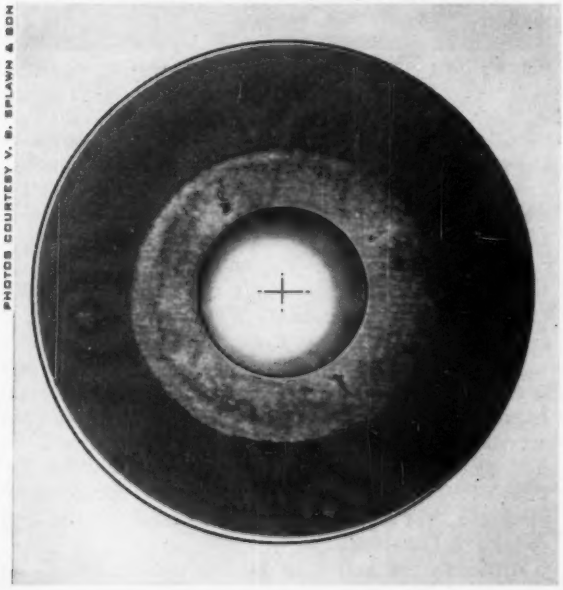
It is not sufficient that it turn freely, for the very nature of its work also demands it turn *accurately*. And there are several ways in which both accuracy and freedom are destroyed: (1) crooked bore; (2) egg-shape bore; (3) too-small bore; (4) foreign matter in the bore; (5) rubber projecting over the end of the roll; and (6) inaccurate length.

Probably the most prevalent of these defects is (1) or the crooked bore. An egg-shape bore will destroy rolling accuracy, give the roll an eccentric motion that can leave its mark on the fabric. An oversize hole will present the same problem and both are traceable to poor reaming.

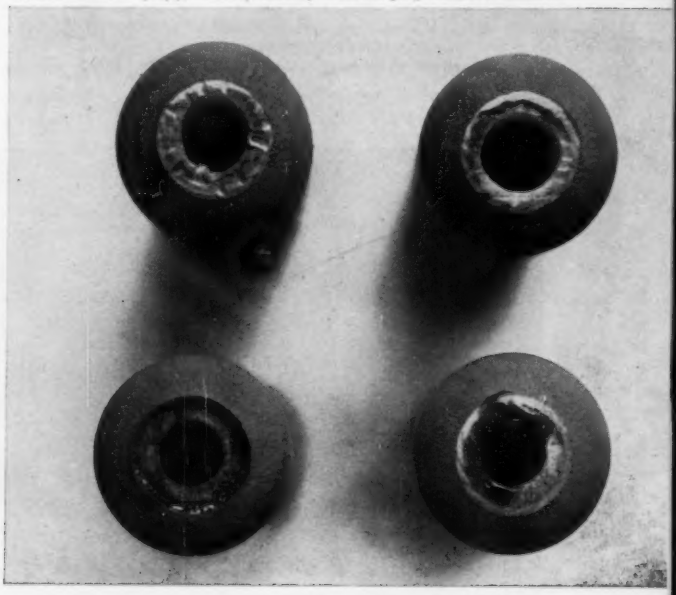
The too-small bore will simply bind and drag and

An eccentric roll, as this, can easily temple-mark the fabric.

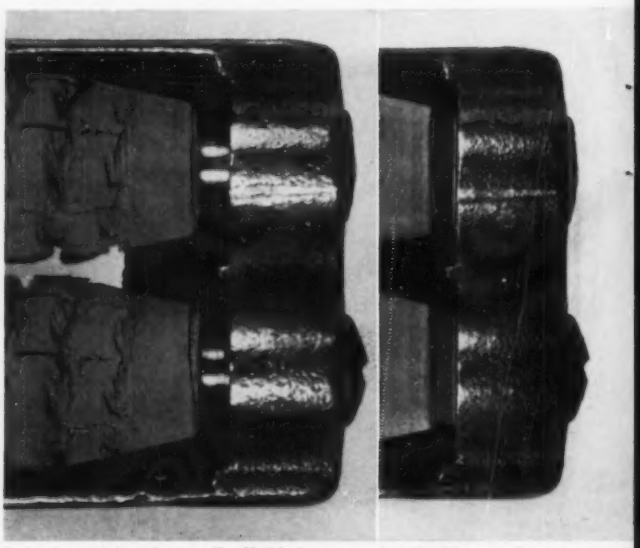
PHOTOS COURTESY V. S. SPLAWN & SON



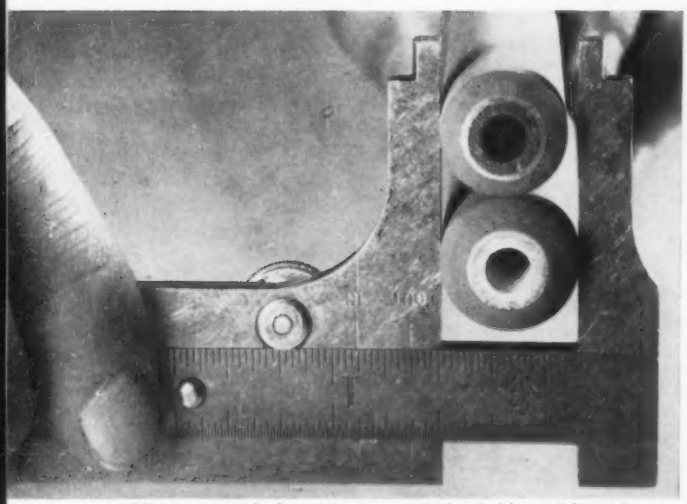
Oversize holes (top), and (bottom) overhanging rubber, shellac.



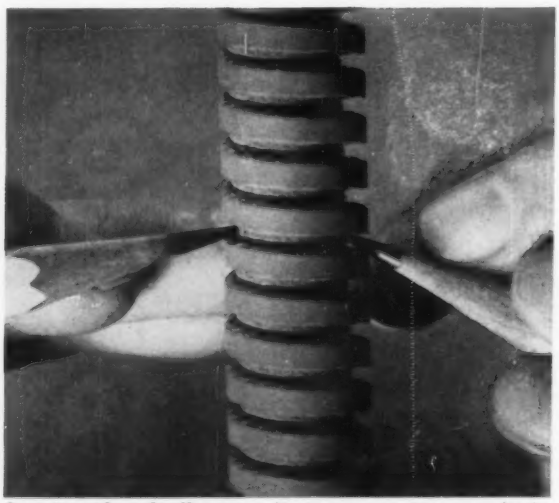
Between-roll tolerances should not vary more than 0.003" - 0.005".



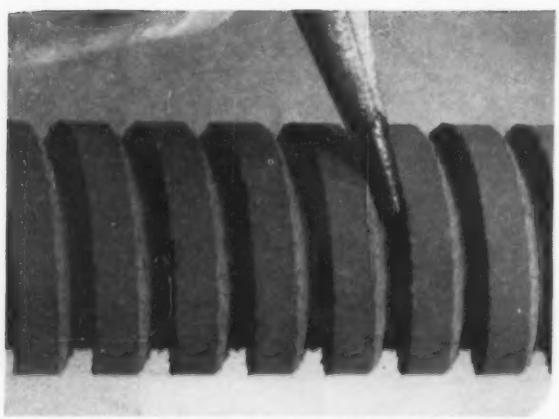
End play of too-short rolls (left) is removed with fiber washers.



Mixing unequal diameters causes faulty holding, fabric damage.



Opposite sides of off-center rolls have unequal groove depths.



Install with bevel side of groove toward the body of the fabric.

can be corrected by rereaming to size. Sometimes the rubber will collapse the core and cause binding.

Glue, shellac (see photos), or other foreign matter will affect free and accurate turning and can usually be removed by reaming.

Rubber hanging over the end of the roll may result from improper machining or from being pulled off the core by the fabric. Whatever the source, it prevents free turning and must be corrected.

The roll should be of accurate length. If the roll is too long, it may bind in the temple, or possibly not fit in the temple at all without trimming or grinding off the end. If the roll is too short, there will be play between the end of the roll and the temple. This situation, however, can usually be remedied by placing a thin fiber washer at the end of the roll to take up the slack.

Although the roll may be the correct length, in

some cases the temple has been worn by the end of the roll to the point where there is still a gap. This situation may be remedied in the same way.

In some cases, a temple may be rough where the core has been in contact with it (pointing toward body of cloth), and cut the core of the roll, causing a fine dust. This dust is not desirable on fabric, and particularly on loom finished goods. This condition may be corrected by the use of fiber washers.

Any of the above (or combination of the above) defects which cause the roll to "bind" in the temple or prevent its turning freely, in addition to subjecting fabric to temple marks, will cause loom stoppage. This will result because a roll not turning freely will cause the fabric to bag back against the reed and in the end will allow the "end" of the warp to become slack. The roll surface should be uniform.

The roll should be accurate in diameter from one end to the other, except where special tapers or "indicator" taper is employed. ("Indicator taper" is merely the sharp end of the temple roll which always points toward the center of the fabric when in working position in the temple.)

All rolls of a specified diameter should meet that specification. Tolerances between rolls should not vary more than 0.003″-0.005″. If the rolls vary, there will surely be some of two different sizes placed in the temples.

Any time rolls of unequal diameter are run in a temple, there will be a lack of uniform holding. And in addition to subjecting the cloth to temple marks, any time there is a lack of uniform or proper holding, the "ends" will be allowed to drag heavily against the reed and thereby increase reed cost.

They should be concentric. A roll that is not will most likely afford unlimited trouble with temple marks. One definite indication of off-center grinding or cutting of a roll is the presence of a deep groove on one side and a shallow groove on the other.

Frequently, marking will extend across the entire width of the fabric. Such an extended mark is sometimes diagnosed as loom difficulty. However, on extremely sheer fabrics, there is a good possibility that it originates at the temple rolls. There are temple rolls designed specifically to eliminate this situation.

There is usually an indicator (such as a short taper) on special cut grooves showing the direction in which to insert the roll in the temple. However, on many conventional, grooved rolls, there is no indicator to show which way to insert the roll into the temple.

There is a slightly beveled side and a somewhat sharp side of the groove, usually. To gain the maximum holding and life from a roll, turn the beveled side of the grooves to face toward the body of the cloth.

Much emphasis is placed on the accuracy of the core, for, with a faulty or inaccurate core, it is next to impossible to have an accurate temple roll. However, regardless of the source of fault, if it is present, it will spell "trouble."

USDA and mills disagree on gin sampling devices

■ TWO DIAMETRICALLY opposed views of devices for mechanical sampling of cotton at the gin have recently been made public. The U. S. Department of Agriculture, which developed mechanical sampling, is on the pro side; while the mills, speaking through the American Cotton Manufacturers Institute, take the con.

The thinking of the USDA is given in the October issue of *Agricultural Marketing*, published by the Agricultural Marketing Service, in an article by agricultural economist Maurice Cooper. According to the article, mechanical sampling has become an important practice in the large-volume, cooperatively owned gins of California and Texas. USDA surveyed farmers, ginners, and cotton merchants, asking their opinions of the samplers and the samples taken from them; these advantages were listed:

Samples represent the entire contents of a bale.

They result in fewer or no cuts in the bale cover.

Less time for sampling.

Sample dimensions are more nearly uniform.

They use less cotton.

They take less time to class.

Buyers prefer them.

Some disadvantages were also cited: cost, complexity, and possibility of not getting samples from outer layer of bale.

The mills' opposition to the mechanical samplers was voiced in a strongly worded statement issued by the ACMI's Committee on Cotton. The statement called attention to a resolution recently passed by ACMI and the American Cotton Shippers Association, which charged that during recent years a strong "propaganda campaign on behalf of the automatic gin sample has been directed at the cotton trade." So far, the resolution continued, "few if any of the mills have indicated that the automatic sample is completely satisfactory for proper classing."

The resolution contended that "the primary problem at hand is the apparent intention of advocates of the automatic sample to require the use of this device through concerted educational program or by law which would eliminate cutting of samples as presently done . . . any legislation would ultimately lead to all trading being done on USDA classification, which would be one of the final steps to socialization of the raw cotton industry."

Ask for 1960 Index

THE SUBJECT INDEX of articles which appeared in "Textile Industries" in 1960 (Vol. 124) will not be included in a regular issue of the magazine. Instead, the annual index will be produced as a separate publication and furnished free to those who ask for it.

Either write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga., or use the handy postage-free card on page 153 to request a copy.

Figure 1

COEFFICIENT of VARIATION

Mill: | Dept.: Carding | Mach.: Saco Lowell Cards | Prep. by: | Date:

Item Tested: Card Sliver Weight | Stock:

Yds. Tested: 6/card | Doublings: 1 | Std.: | High: | Low: | Average: 49.46

Date:	8-20	8-20	8-20	8-20	Range (over-all)	8-21	8-21	8-21	8-21	Range (over-all)
Mach. No.	10	74	51	60		8	45	2	46	
	49.0	49.0	48.0	48.0	1.0	49.0	50.0	56.4	51.0	7.4
	46.5	44.0	49.5	46.0	5.5	51.0	51.0	56.0	47.5	8.5
	46.5	46.5	48.0	49.0	2.5	50.0	50.1	54.0	53.2	4.0
	49.0	47.5	47.0	48.0	2.0	50.0	50.5	53.5	47.0	6.5
	46.0	50.0	50.0	47.0	4.0	50.0	50.1	58.4	50.6	8.4
	49.5	47.0	49.0	50.0	3.0	50.0	49.5	56.0	53.0	6.5
Range (within)	3.5	6.0	3.0	4.0		2.0	1.5	4.9	6.2	
Average	47.75	47.33	48.58	48.00		50.00	50.20	55.72	50.38	

Date:	8-22	8-22	8-22	8-22	Range (over-all)	8-23	8-23	8-23	8-23	Range (over-all)
Mach. No.	7	43	34	48		80	49	18	14	
	50.0	48.3	54.5	48.0	6.5	48.0	50.0	47.0	45.0	5.0
	50.0	52.0	50.5	49.5	2.5	46.5	51.5	47.0	46.0	5.5
	49.2	48.1	47.0	49.5	1.5	49.5	51.2	47.0	48.0	4.2
	51.6	49.7	49.0	49.0	2.6	49.0	52.0	45.0	47.5	7.0
	48.6	51.4	53.0	48.5	4.5	48.5	52.0	47.5	49.0	4.5
	49.0	52.7	52.0	49.0	3.7	46.5	52.0	45.0	48.5	7.0
Range (within)	3.0	4.4	6.5	1.5		3.0	2.0	2.5	4.0	
Average	49.73	50.47	51.17	48.92		47.33	51.45	46.42	47.33	

SUMMARY	Within	Overall
1. Total of Ranges	58.0	1138
2. Average Range	3.625	4.742
3. Average Range, %	7.33	9.59
4. Coefficient of Variation	2.95%	4.76%

Notes:

Figure 2

COEFFICIENT of VARIATION

Mill: | Dept.: Drawing | Mach.: Four 831 Medley Breaker Drawing | Prep. by: | Date:

Item Tested: Breaker Sliver Size | Stock:

Yds. Tested: 1/Delo | Doublings: 6 | Std.: | High: | Low: | Average: 60.29

Date:	8-20	8-20	8-20	8-20	Range (over-all)	8-21	8-21	8-21	8-21	Range (over-all)
Mach. No.	9	16	15	11		14	10	15	13	
	60.2	60.2	62.3	60.3	2.1	61.4	60.2	60.6	59.1	2.3
	61.3	60.4	60.5	61.2	0.9	61.6	59.8	58.6	55.7	5.9
	59.5	59.5	63.9	60.2	4.4	62.7	59.7	58.7	59.5	4.0
	58.9	61.7	61.0	63.2	4.3	63.0	61.4	60.7	60.7	2.3
	61.7	60.0	64.1	57.4	6.7	63.0	60.6	59.4	59.6	3.6
	60.2	63.5	61.0	58.9	4.6	61.2	62.2	60.2	61.4	2.0
Range (within)	2.8	4.0	3.6	5.8		1.8	2.5	2.1	5.7	
Average	60.3	60.9	62.1	60.2		62.2	60.7	59.7	59.3	

Date:	8-22	8-22	8-22	8-22	Range (over-all)	8-23	8-23	8-23	8-23	Range (over-all)
Mach. No.	12	9	16	13		12	14	11	10	
	61.2	59.9	60.2	60.8	1.3	61.2	57.4	58.2	60.5	3.8
	61.2	60.5	58.7	60.0	2.5	61.5	59.5	61.7	58.9	2.8
	60.9	60.5	56.0	62.2	6.2	57.7	60.7	58.2	58.9	2.9
	61.8	63.6	58.2	58.2	5.4	60.4	58.1	56.0	58.3	4.4
	63.1	60.6	60.2	60.6	3.5	60.4	57.8	51.9	59.6	2.6
	61.8	60.4	60.6	62.4	2.0	58.8	61.1	63.1	55.5	7.6
Range (within)	2.8	3.7	4.6	4.2		3.7	3.7	7.1	5.0	
Average	61.8	60.9	59.0	60.7		60.0	59.1	59.2	58.6	

SUMMARY	Within	Overall
1. Total of Ranges	63.1	88.1
2. Average Range	3.94	3.67
3. Average Range, %	6.54	6.09
4. Coefficient of Variation	3.62%	2.98%

Notes:

Figure 3

COEFFICIENT of VARIATION

Mill: | Dept.: Drawing | Mach.: 3 over 4 Medley | Prep. by: | Date:

Item Tested: Finisher Sliver Size | Stock:

Yds. Tested: 1/Del. | Doublings: 6 | Std.: | High: | Low: | Average: 59.54

Date:	8-22	8-22	8-22	8-22	Range (over-all)	8-23	8-23	8-23	8-23	Range (over-all)
Mach. No.	8	7	5	6		8	6	5	7	
	60.2	59.7	59.3	59.6	1.0	58.5	60.5	59.5	58.4	2.1
	61.6	59.9	59.1	59.8	2.5	61.3	60.0	59.7	61.0	1.6
	59.3	59.6	59.3	57.6	2.1	59.2	59.1	60.2	58.7	1.5
	60.3	59.0	56.2	57.5	4.1	59.3	60.2	58.3	60.2	1.9
	59.9	57.7	59.6	59.6	2.2	61.4	59.7	59.5	59.9	1.9
	59.3	58.3	60.2	59.6	1.9	60.6	59.7	58.2	59.5	2.4
Range (within)	2.3	2.2	4.0	2.3		2.9	1.4	2.0	2.6	
Average	60.1	59.0	59.0	58.9		60.1	59.9	59.2	59.6	

Date:	8-24	8-24	8-24	8-24	Range (over-all)	8-27	8-27	8-27	8-27	Range (over-all)
Mach. No.	5	6	8	7		8	5	7	6	
	60.2	58.5	60.5	60.6	2.1	61.8	59.7	59.0	58.9	2.9
	60.2	60.0	60.2	60.0	0.2	61.8	60.0	58.3	60.0	3.5
	58.7	59.6	59.7	60.7	2.0	58.0	60.0	60.7	60.2	2.7
	58.9	57.6	60.7	60.7	3.1	60.5	58.5	59.3	59.0	2.0
	59.4	58.3	60.2	59.0	1.9	60.0	58.7	59.3	58.5	1.5
	62.5	59.3	59.5	59.3	4.2	61.0	58.0	58.0	59.0	3.0
Range (within)	3.8	2.4	1.2	1.7		3.8	2.0	2.7	1.7	
Average	60.0	58.7	60.1	60.1		60.5	59.2	59.1	59.3	

SUMMARY	Within	Overall
1. Total of Ranges	99.0	548
2. Average Range	2.44	4.26
3. Average Range, %	4.10	3.80
4. Coefficient of Variation	1.64%	1.84%

Notes:

Figure 4

COEFFICIENT OF VARIATION

Mill: | Dept.: Roving | Mach.: Saco Lowell J-3, 10 x 5 | Prep. by: | Date:

Item Tested: 150 Hank Roving | Stock:

Yds. Tested: 12 | Doublings: 1 | Std.: | High: | Low: | Average: 1.546

Date:	8-27	8-27	8-27	8-27	Range (over-all)	8-28	8-28	8-28	8-28	Range (over-all)
Mach. No.	1	9	3	5		6	2	10	1	
	1.55	1.53	1.56	1.53	.03	1.57	1.53	1.50	1.56	.07
	1.52	1.53	1.55	1.52	.03	1.55	1.56	1.51	1.51	.05
	1.52	1.53	1.55	1.52	.03	1.56	1.58	1.53	1.56	.05
	1.52	1.53	1.51	1.53	.02	1.51	1.56	1.48	1.54	.08
Range (within)	.03	.00	.05	.01		.06	.05	.05	.03	

Date:	8-29	8-29	8-29	8-29	Range (over-all)	8-30	8-30	8-30	8-30	Range (over-all)
Mach. No.	3	5	6	9		10	7	2	1	
	1.54	1.53	1.57	1.64	.11	1.50	1.49	1.60	1.48	.12
	1.54	1.53	1.51	1.56	.07	1.52	1.57	1.59	1.52	.07
	1.56	1.53	1.54	1.60	.07	1.47	1.47	1.54	1.49	.07
	1.54	1.54	1.55	1.55	.01	1.54	1.48	1.51	1.54	.09
Range (within)	.02	.01	.03	.09		.07	.11	.06	.06	

Date:	8-31	8-31	8-31	8-31	Range (over-all)	9-1	9-1	9-1	9-1	Range (over-all)
Mach. No.	6	10	7	3		9	2	5	7	
	1.51	1.56	1.57	1.55	.06	1.53	1.57	1.63	1.59	.10
	1.55	1.56	1.60	1.60	.05	1.54	1.58	1.54	1.54	.04
	1.54	1.52	1.57	1.52	.05	1.54	1.58	1.51	1.59	.05
	1.54	1.57	1.60	1.64	.10	1.53	1.61	1.52	1.54	.09
Range (within)	.04	.05	.03	.12		.01	.04	.11	.05	

SUMMARY	Within	Overall
1. Total of Ranges	1.18	1.49
2. Average Range	.0492	.0621
3. Average Range, %	3.19	4.02
4. Coefficient of Variation	1.56%	1.97%
5.		

Notes:

Causes of excessive size variation

from picking through spinning in cotton yarn manufacturing

TABLE 1
Process-to-Process Size Variation in a Typical Mill

Process	Draft	Actual CV: Within machine	Actual CV: Room over-all	Expected CV: Within machine	Expected CV: Room over-all
Carding	100	2.9	4.7**	3.0	3.4
D'w'ng 1	7	2.6**	3.0*	2.1	2.8
D'w'ng 2	6	1.6	1.9	1.4	1.8
Roving	11	1.6	2.0*	2.0	1.8
Spinning	14	3.9*	4.2*	2.7	4.1

*Actual variation is slightly in excess of normally expected variation, but the excess is so small that it could represent sampling fluctuations.

**Actual variation is considerably in excess of expected variation, indicating that corrective action is needed.

NOTE: Normally expected variation is based on formulas developed at the Institute.

Figure 5

COEFFICIENT of VARIATION

Dept.: Spinning Mach.: Saco Lowell Roth

Yds. Tested: 120 Readings: 1 Std.: High: Low: Average: 20.99

Date	8-23	8-23	8-23	8-23	Range (over-all)	8-24	8-24	8-24	8-24	Range (over-all)
Mach. No.	16	17	18	19		20	21	22	23	
	21.2	21.4	21.8	21.4	0.6	20.6	21.7	21.3	21.2	1.1
	21.2	21.4	21.4	21.4	0.2	21.0	21.9	20.9	21.2	1.0
	20.8	20.2	23.0	21.4	2.8	21.2	21.0	20.0	20.0	1.2
	21.6	20.4	20.6	22.2	1.8	20.2	21.0	20.3	21.8	1.6
	20.8	21.6	21.9	22.0	1.2	20.6	22.6	19.5	20.2	3.1
	19.3	21.6	19.8	22.4	3.1	23.0	21.6	20.8	20.0	3.0
	22.6	21.0	21.0	22.2	1.6	21.2	21.8	20.9	20.6	1.2
	21.8	21.2	21.8	21.6	0.6	21.4	21.5	21.2	20.0	1.5
Range (within)	3.3	1.4	3.2	1.0		2.8	1.6	1.8	1.8	
Average	21.16	21.10	21.40	21.83		21.15	21.64	20.61	20.63	

Date	8-25	8-25	8-25	8-25	Range (over-all)	8-27	8-27	8-27	8-27	Range (over-all)
Mach. No.	33	34	35	36		57	58	59	60	
	21.0	20.0	21.0	20.8	1.0	21.2	22.4	20.4	20.6	2.0
	21.0	21.6	20.2	20.0	1.6	20.4	22.8	20.2	20.8	2.6
	19.9	20.0	20.4	21.0	1.1	20.6	23.2	20.4	20.4	1.8
	19.7	21.0	21.2	19.4	1.8	21.2	21.9	21.2	20.8	1.0
	20.0	21.0	20.8	19.6	1.4	20.4	20.4	21.5	22.4	2.0
	22.0	20.0	20.2	21.0	2.0	20.4	22.2	18.8	18.2	4.0
	21.9	19.4	21.2	20.4	2.5	23.2	21.4	20.8	21.2	2.4
	20.8	20.4	22.0	19.1	2.9	20.2	21.6	20.2	21.0	1.4
Range (within)	2.3	2.2	1.8	1.9		3.0	2.4	2.7	4.2	
Average	20.79	20.43	20.88	20.16		20.95	21.95	20.49	20.68	

SUMMARY	Within	Overall
1. Total of Ranges	37.4	57.1
2. Average Range	2.338	1.784
3. Average Range, %	11.14	8.50
4. Coefficient of Variation	5.90%	4.17%

Notes:

by Norbert L. Enrick—Exclusive
*Institute of Textile Technology**

THE CAUSES of excessive size variations from opening through spinning, as they are listed in this report, have been ten years accumulating. They are the result of a great number (1, 2, 3)[1] of studies made in textile plants to find, investigate, and correct the reasons for excessive nonuniformity, and they are listed herein by departments to make it easy for the reader to find them.

How to Use the Report. Figures 1 through 5 contain most of the data used in *Table 1*, which compiles the CV's found against those expected or desired. *Table 1* also contains appropriate explanations of some of the variations found. Thus the *Figures 1* through *5* are the work sheets used in making up *Table 1*. The lists are arranged by department to assist one in looking up the equipment points to be checked in searching for the causes. These reference check lists are:

List 1—Causes of Excessive Variation in Picking
List 2—Causes of Excessive Variation in Carding
List 3—Causes of Excessive Variation in Drawing
List 4—Causes of Excessive Variation in Combing
List 5—Causes of Excessive Variation in Roving
List 6—Causes of Excessive Variation in Spinning

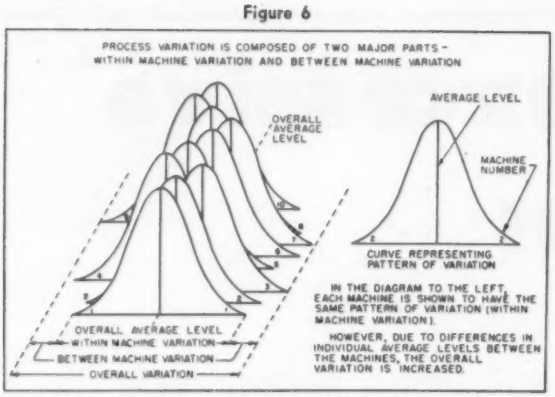
While these lists represent causes encountered, they are in all likelihood incomplete and subject to enlargement as further experience is gained.

Basic Types of Variation. The basic causes of excessive variation have been classified into three basic types: (1) within-delivery variation; (2) within-frame variation; and (3) room over-all variation.

On one-delivery machines, such as a picker or card, the within-delivery variation is identical to within-frame variation. However, where there are several deliveries on one machine, such as in drawing, the within-frame variation consists of both within-delivery and between-delivery variation. Similarly, for an entire processing department, the room over-all variation is composed of the two ele-

*Present address is University of Virginia, Graduate School of Business Administration, Charlottesville.
[1]Numbers in parentheses designate references at the end of the report.

Figure 6


PROCESS VARIATION IS COMPOSED OF TWO MAJOR PARTS - WITHIN MACHINE VARIATION AND BETWEEN MACHINE VARIATION
OVERALL AVERAGE LEVEL
AVERAGE LEVEL
MACHINE NUMBER
CURVE REPRESENTING PATTERN OF VARIATION
IN THE DIAGRAM TO THE LEFT, EACH MACHINE IS SHOWN TO HAVE THE SAME PATTERN OF VARIATION (WITHIN MACHINE VARIATION).
HOWEVER, DUE TO DIFFERENCES IN INDIVIDUAL AVERAGE LEVELS BETWEEN THE MACHINES, THE OVERALL VARIATION IS INCREASED.
OVERALL AVERAGE LEVEL
WITHIN MACHINE VARIATION
BETWEEN MACHINE VARIATION
OVERALL VARIATION

From Enrick, N.L., "Quality Control" (1960), The Industrial Press, New York. Reproduced with permission.

ments of within-machine variation plus the between-machine variation.

The importance of the variation coefficient as a measure of product quality, and the manner in which within-machine plus between-machine variation give room over-all variation, are illustrated in *Figure 6*.

List 1

Within-Lap Variation:

1. Opening line feed is irregular, or stock is improperly opened (clumpy)
2. Blending reserve level varies excessively or driving belt slips
3. Out-of-roundness of calender rolls and gears, fluted rolls, beaters and beater bearings, screens and screen bearings, or loggerhead bearings
4. Lap pins bent and vibrating
5. Evener motion insensitive due to belt slippage, lint or grease clog-up, or excessive play in mechanical linkages
6. Fluted roll wear or wear of fluted roll drives
7. Screen surface uneven or clogged
8. Fan speeds improper, causing uneven, excessive or inadequate air passages, such as turbulent air flow at screens, excessive air pressure in waste box
9. Improperly set or choked dampers

Lap-to-Lap Variation on Picker:

Excessive variation in lap weight, from lap to lap on the same picker, may be due to excessive or inadequate weight adjustments by the operator, or to unsatisfactory lap weighing scales which do not give fine enough readings to permit proper picker adjustments based on actual lap weights. Lack of instruments showing moisture content and providing for compensating devices, such as moisture-regain counterweights for lap scales, may cause excess variation in true weight from lap to lap. Variation in lap length causes faulty weight values.

Over-all Variation:

Excessive over-all variation indicates differences in actual draft between pickers. This resultant variation in lap weights between pickers, added to the lap-to-lap variation within pickers, and the variation within laps, yields over-all variation. The latter is fed into the cards and drawing.

List 2

Excessive Within-Card Variation:

1. Worn doffer bearings
2. Untrue calender rolls
3. Worn feed-roll bearings
4. Undue slippage of lap from lap roll to feed roll
5. Defective or chattering gears in bonnet
6. Unsatisfactory clothing
7. Excessive variation in the lap

Excessive Over-all Variation:

Excessive over-all variation indicates differences in actual draft between cards, caused by one or more of the following:

1. A difference among lap rolls on different cards, (⅛-inch or more)
2. Differences in settings among card grinders' sections
3. Wrong gears in drafting train, particularly tension gears
4. Differences in age and wear among card sections, thereby demanding differences in tightness of settings
5. Differences in trumpet sizes (especially if cast iron)
6. Differences in average lap weight off different pickers which are then transferred into the cards

List 3

Excessive Within-Delivery or Within-Frame Variation:

1. Weight hooks elongated, bent, and rubbing the steel rolls
2. Adjustable weight hangers too long and resting on the weight-release bars
3. Weight linkage binding and weights resting on bolt ends
4. Worn or broken roll stands
5. Scored roll necks
6. Bent rolls (due to driving gears off and on)
7. Damaged gears (chattering or broken teeth)
8. Flattened top rolls with worn coverings
9. Gears not meshed properly

Excessive Over-all Variation:

Excessive over-all variation indicates differences in actual draft between frames, caused by one or more of the following:

1. Variation transferred from card groups that run at different average level and feed in the channeling (rather than random) flow of drawing.
2. Different draft or crown gears in use on some stock
3. Differences in trumpet sizes among different frames. (NOTE: If different trumpets are used on

one frame, excess within-frame variation results)

4. Differences in tension gears among different frames

5. Differences in actual draft among different make, year, or wear of frames, not compensated by gearing

6. Differences in weighting used on frames

List 4

Within-Delivery or Within-Machine Variation:

1. Non-standard drafts, such as between lap roll and feed roll or between detaching roll and calendar roll

2. Rolls, eccentric or sticking

3. Nipper knives bent or misaligned

4. Needles broken or bent

5. Timing of top combs or detaching rolls off-standard

6. Gears damaged (chattering or broken teeth), or not meshed properly

7. Roll stands worn or broken, roll necks scored

8. Weight linkage binding, or elongated and bent weight hooks

Over-all Variation:

Excessive over-all variation indicates differences in waste extraction or actual draft between frames, caused by one or more of the following:

1. Variation transferred from lap winder or ribbon lappers run at different average level and feeding in channeled (rather than random) flow to combing

2. Differences in draft or tension gears, or trumpet sizes

3. Differences in noils removed

List 5

Excessive Within-Delivery or Within-Frame Variation:

1. Builder motion belt slippage

2. Roll defects, such as: fluted, marks caused by the flutes of steel rolls; channeled, a groove is formed by constantly running the stock over the same surface; flattened, by leaving the weights on while not running; rough surface, due to uneven wear or loosening of some of the surface of the cover; loosened cots, due to adhesive releasing the cloth, leather, cork or synthetic or to leather stretching; and variable diameters, due to poor cloth or leather or to poor buffing or due to uneven wear on the frame

3. Torsional roll vibration

4. Clogged or chipped flutes

5. Faulty gearing; worn, damaged or improperly meshed gears

6. Worn roll bearings or scored journals

7. Stretching of sliver fed due to uneven tension

8. Differences in twist in sliver fed

9. Differences in roll settings within frame

10. Faulty weighting device or weights not properly applied

11. Worn or broken roll stand; waste collected in roll stand

12. Variations in bobbin diameter

13. Bent flyers or rough spots on flyers

14. Differences in tensions between spindles

15. Irregular or clogged aprons

16. Slack chains

Excessive Over-all Variation:

1. Variation transferred from drawing through channeling rather than random flow of stock

2. Use of different gears (lay, tension, draft or twist) between frames on the same stock

3. Differences of roll diameters or roll settings between frames

4. Differences in models and makes of frames

5. Differences in roll coverings between frames

6. Differences in weighting between frames

7. Differences in draft distribution between frames

List 6

Within-Delivery Variation:

1. Skewers, skewer bearings or bobbin suspension holders defective or clogged with waste

2. Stretched roving from roving frame, misplaced roving bars or faulty roving trumpets

3. Rolls worn, run-out, misaligned, improperly set or weighted, or improperly covered (static-producing)

4. Drafting aprons worn, grooved, seamy, or slipping

5. Bearings worn, misaligned

6. Gears defective or not meshing properly

7. Lifter rods worn or sliding

8. Spindles improperly lubricated; running on worn bearings; bent or otherwise out of balance

9. Rings worn or out of alignment with spindles

10. Travelers worn or of improper weight

Within-Machine Variation:

1. Differences in roving twist, tension, or size from different frames

2. Differences in trumpet sizes

3. Unequal tape tensions and slippage

4. Cylinder misaligned, or bearings misaligned

5. Differences in roll weightings; or bent, damaged or otherwise faulty weight hooks or saddles

6. Differences in gearing between the sides of the frame

7. Unequal roll wear, or ring wear

Room Over-all Variation:

1. Differences in actual draft or contraction among frames

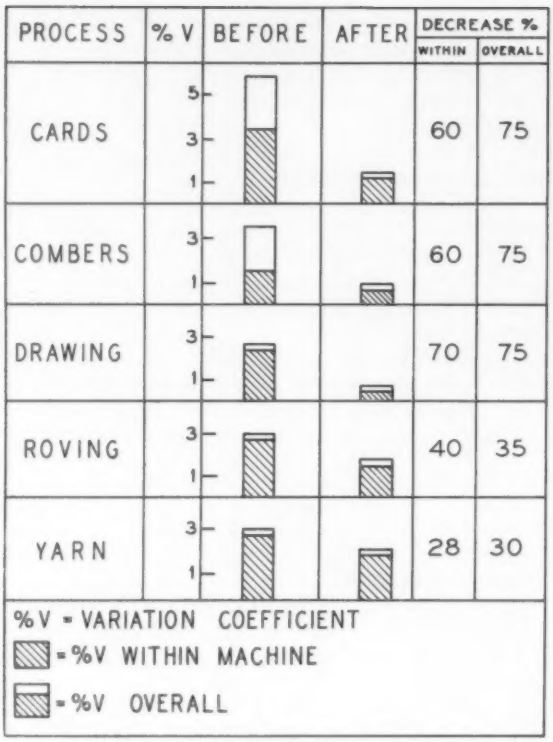
2. Differences in over-all frame conditions, or in model and make

3. Differences in roll weightings or roll settings

4. Differences in roving size from different frames, channeled into spinning frame groups

Relationship of Short- to Long-Term Variation. From an examination of the lists of machine defects

Figure 7



Comparison of size variation coefficients before and after statistical quality control was applied.

that may cause excessive size or long-term variations, it will be noted that there are many types of defects that usually produce only short-term variations, such as measured on a Brush uniformity analyzer or Uster evenness tester. The fact is, however, that all such defects can also produce long-term variations. Therefore, when checking machinery for causes of excessive size variation, it is advisable to include in the check list all causes, even those which usually are considered responsible only for short-term variations.

For example, a roll defect in the back-drafting zone may be responsible for both long-term and short-term variation in the stock produced at that delivery. A roll defect in the front zone may be responsible primarily for short-term variation in the stock produced at this delivery; however, at the same time the defect may affect the average weight of the stock from that delivery, thereby introducing between-delivery differences on the frame, and possibly showing up as excessive within-frame variation.

Thus, in preparing check lists for causes of excessive size variation, it was inevitable that among the causes tabulated would also be those primarily but not necessarily associated only with short-term variation. In this manner, a more complete check list is obtained.

Improvements Attainable. Improvements attainable through process-to-process variations analysis, combined with a thorough check and correction of causes of excessive variation, are illustrated from an actual case history involving a combed yarn mill, *Figure 7*. This shows how a reduction in size variation, beginning with the cards, and followed up in successive processing stages, yielded a yarn with a 30% improved long-term uniformity, or coefficient of size variation.

Correlation analyses performed on mill data have shown that an improvement in long-term uniformity is generally accompanied by a similar improvement in the skein-to-skein strength variation of yarn. This in turn is beneficial to the spinning and weaving operations.

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2. Enrick, N. L., Quality Control Through Statistical Methods, *Modern Textiles* Magazine Handbook No. 3, Rayon Publishing Corp., New York, N. Y. (1954).
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Tufted textile shipments soar

■ MILL SHIPMENTS of tufted carpeting during the first six months of 1960 were a healthy 13% above shipments for the first half of 1959, a preliminary report by the Bureau of the Census reveals. Shipments of rugs and carpeting, including roll goods and rugs larger than 4 x 6 feet, also were 9% above the previous six months' record total.

For a 1960 Index of Ti

write to The Editors, "Textile Industries," 806 Peachtree St., N.E., Atlanta 8, Ga.

Small rugs—tufted bath and scatter rugs smaller than 4 x 6—increased 1% over shipments for the first half of last year but were 11% under the record-breaking total for the last half of 1959.

Tufted bedspread shipments showed a 5% increase over spring 1959. Bedspread shipments last year were the largest ever reported for the industry.

Value of tufted carpet shipments has shown spectacular growth in every year since the tufted industry first made this product, climbing from $19 million in 1951 to over $314 million in 1959. So steady has been this growth that shipments in each six-month period have exceeded those of the corresponding season of the previous year.

While square yardage and dollar figures will not be known until a final report is made by the Bureau of the Census, unofficial reports of a number of the larger tufting companies indicate a higher average price per square yard, due to increased sales in higher bracket items and to more extensive use of higher priced pile fibers. Bedspread manufacturers also report better reception and increased shipments of medium and higher-priced tufted spreads—styles with a wholesale price of $5.00 and above.

Arnold M. Sookne (left) of Harris Research Laboratories, received the 1960 Olney Medal Award during the Philadelphia convention. It is presented here by **Weldon G. Helmus**, AATCC president.

AATCC Convention Report

THE CITY of Philadelphia was the scene this year of the annual AATCC convention, where more than 1900 chemists, finishers, and chemical manufacturers attended the technical sessions devoted largely to the latest advances in dyeing and finishing technologies.

In the annual Intersectional Contest, the Piedmont Section of the Association took first place for an exhaustive study of the mechanisms of chlorine retention by resin-treated fabrics; while the Delaware Valley Section took second place for a paper on a one-step dyeing-resin treatment process. Third place went to the Rhode Island Section for its paper, "A Study of Fluorcarbon Finishes and Their Effect on Dyestuffs."

Abstracts of some of the papers follow.

Chemistry of chlorine retention in resin-treated cottons

Winning paper in the AATCC Intersectional Contest

Piedmont Section

Abstract

■ RECOGNIZING a need for a better understanding of the chemistry of chlorine retention by resin-treated cotton fabrics, the Piedmont Section of the AATCC undertook a study of this phenomenon through systematic experimental work. Under the project studies were made of (1) the absorption of chlorine by resin-treated fabrics under varying conditions, (2) the reactions taking place in the chlorination bath other than chloramide formation, (3) the stability of chloramides of the various resins at room temperatures and higher, (4) the decomposition of resin chloramides in the bath and on the fabric, and (5) the capacity of various resins to neutralize HCl during chloramide decomposition.

Five resin types were selected for the studies:

a. UF

b. Dimethylolethyleneurea

c. Triazone formaldehyde

d. Modified melamine formaldehyde

e. Tetramethylol acetylenediurea

Results of studies outlined above showed that (1) with increasing hypochlorite concentration, there is rapid rise in chlorine absorption by the resinated fabric, which levels out characteristically for each resin; (2) that hypochlorite concentrations are reduced after 15 minutes over original concentrations in the bath, that degree of active chlorination loss varies with the resins, and that an oxidative attack of hypochlorite on resinated fabrics occurs in the chlorination bath at the site of free NH groups in the resin molecule; (3) that the amount of retained chlorine lost by chlorinated, resinated fabric during a three-week storage period was most rapid for triazone formaldehyde, very slow for modified melamine formaldehyde, and intermediate for other 3 resins; (4) that a hydrogen atom is extracted from cellulose during chlorination, which is the means of forming hydrogen chloride, and which causes major damage by acid degradation; and (5) that only the triazone resin showed strong neutralizing power, with the melamine having more neutralizing power than the other three resins.

The over-all study pointed out a theoretical basis for the difficulties in reproducibility of the AATCC Test 92-1958. Because of the many

different factors involved in chlorine damage and the varying behavior of each resin towards each factor, any test procedure which departs from end-use procedure to arrive at an accelerated test is apt to give distorted results with at least some resins.

A number of ways to achieve low chlorine damage were suggested in the paper:

1. By the production and use of resins which will not form large amounts of chloramide on bleaching.

2. By the combination of resins and treating conditions in which all nitrogen atoms in the resin are completely substituted in the cured resin.

3. By the discovery and use of resins forming chloramides stable to decomposition at normal ironing temperatures.

4. By the incorporation of free radical inhibitors to inhibit HCl formation.

5. By the development and incorporation of wash-fast acid neutralizing materials.

One-step dyeing and finishing of cellulosic fabrics

Delaware Valley Section

Abstract

■ A SINGLE-STEP process has been developed for the application of reactive dyes and alkaline catalyzed UF resins to cotton and viscose rayon. The process is applicable to dyes of the vinyl-sulfone, trichloropyrimidine, monochloro- and dichlorotriazine classes.

Following exhaustive screening and testing of resins and catalysts for use with the reactive dyes, formulations were developed and plant trials conducted on rayon and cotton.

In plant trials on a mercerized 80 X 80 cotton sheeting, a gray color was dyed with 0.5% each of Vinyl Sulfone Red, Vinyl Sulfone Yellow, and Vinyl Sulfone Red Violet; a turquoise color with 1% Trichloropyrimidine Turquoise; and a red with 1% Vinyl Sulfone Red. In each formulation there were 10% UF resin solids, 2% polyethylene softener, 3% catalyst (sodium bicarbonate), and 0.05% nonionic surfactant.

Fabric was padded to a wet pick-up of 70% in each of these formulations, dried on clip frame at 220 F, and cured for 3 seconds at 340 F. The lots were then scoured at 140 F in a seven-bowl continuous washing range.

The accompanying table lists the results of physical testing.

Advantages of the process are as follows:

1. Simplicity; with reduction of time and labor costs.

2. Increase in color yield.

3. No adverse effect on light fastness.

4. Good resin fixation and permanency of finish to multiple launderings.

5. Good resistance of dye to acid and alkaline perspiration because dye is primarily attached to cellulose.

Tests on Mill-Treated Cotton Fabric

	Crease Recovery *		Tensile Str. Grab, Lb			Tear Str. Elmendorf		Monsanto Wash-Wear Rating After 5 Home Washes	
	Initial*	After 5 Home Washes**	W	F	Total	W	F	Drip-Dry	Tumble-Dry
Gray	263	254	46	29	75	858	394	4	4
Turquoise	265	248	47	26	73	874	413	4	4
Red	265	254	39	24	63	870	416	4	4-5
Untreated	160	—	64	41	105	902	496	—	—

*Fabric tested was taken from both selvage edges. Average of four determinations.
**Hot Point agitator-type automatic washer, water at 140 F, "Tide" detergent, full cycle, run consecutively, pressed after last wash.

A versatile continuous dyeing machine

by Fred Fortess*
Celanese Fibers Co.

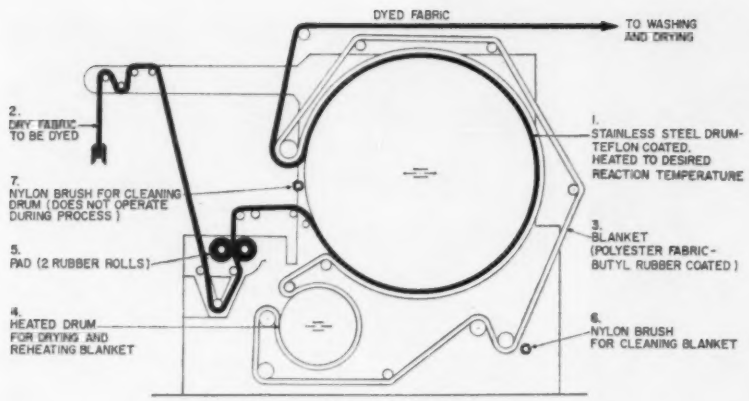
Abstract

■ THE PAPER reported on the experience of more than 100 plant trials carried out on a semicommercial scale Monforts Reactor, at the Celanese Fibers Co. laboratories. While trials were made on numerous fabrics, major emphasis was placed on reserve, cross, and union dyeing of blends and combination fabrics containing Arnel triacetate or acetate with cotton or rayon.

For Arnel triacetate, heavy shades including navy can be dyed in 10 seconds on the Monforts Reactor by the use of an aqueous dyebath containing 20-25% diacetone alcohol and 5% phenyl glycol ether. The same bath raises the safe ironing point of triacetate fabrics from 190 C to 230 C, eliminating need for separate heat treatment.

A drawing of the Monforts Re-

*Coauthors: James E. Torbet, George C. Ward, and Joseph S. Warner.


DYED FABRIC
TO WASHING AND DRYING
2. DRY FABRIC TO BE DYED
1. STAINLESS STEEL DRUM-TEFLON COATED. HEATED TO DESIRED REACTION TEMPERATURE
7. NYLON BRUSH FOR CLEANING DRUM (DOES NOT OPERATE DURING PROCESS)
3. BLANKET (POLYESTER FABRIC-BUTYL RUBBER COATED)
5. PAD (2 RUBBER ROLLS)
4. HEATED DRUM FOR DRYING AND REHEATING BLANKET
6. NYLON BRUSH FOR CLEANING BLANKET

Side view of the Monforts Reactor.

actor is shown in the accompanying figure. In operation, the fabric containing 50-100% water and/or solvent from the pad bath enters the machine and is sealed between the drum and rubber blanket. During the 6-15 seconds of residence time, most of the water is vaporized and is present as a steam atmosphere held in by the 6-8 inch overlap of the rubber blanket. The machine behaves essentially as a high temperature pad-steam unit.

The principal advantage of the Monforts Reactor is a huge reduction in dyeing time. Arnel-cotton fabrics are normally dyed on a closed jig for 6-8 hours. The diacetone alcohol-phenyl glycol ether bath affords heavy shades on Arnel at speeds of 40-50 ypm in a dyeing time of 6-8 seconds.

Experience has shown that facing is a serious problem. One way to control this is by heating the blanket to a higher temperature than the roll. The Celanese laboratory has found that a difference of 25-35 C is required. For example, in one dyeing cited by the authors, the large roll temperature was heated to 140 C, while the small roll was heated to a temperature of 170 C.

Endedness, another problem, can be controlled by (1) using a pad of small capacity—five gallons in the Celanese installation—and (2) using dyebath with no affinity at temperature of padding.

The current nonwoven story

by Howard E. Shearer
Textile Research Dept.
American Viscose Corp.

Abstract

■ AFTER STEADY growth, the nonwoven industry appeared to reach a plateau in 1959. Its annual production has leveled off at about 100,000,000 lb.

Among the recent trends reviewed by the author was the development of the wet-web paper process, which appeared to offer high production rates at lower costs. It was soon found, however, that many problems beset the manufacturer of nonwovens on conventional paper machinery. Fiber costs were higher than anticipated, machines had to be altered and speeds reduced, and new bonding techniques had to be developed. These conditions have raised costs to make this development an unlikely successor to the textile systems of making nonwovens.

A development that is attracting attention because of its practicability and economics is needle loom bonding, which offers a mechanical means of bonding medium weight random and cross laid webs.

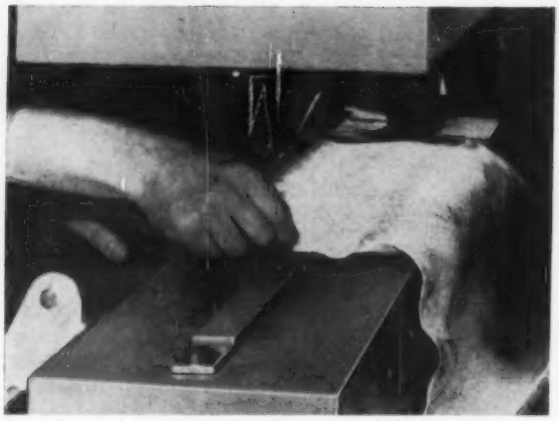
In bonding, the traditional thermoplastic materials have been supplemented by others, such as polyesters, polyamides, and polyolefins. And a wholly new development is a nonthermoplastic multicellular self-bonding viscose rayon fiber which can be formed into a web on the paper or textile systems. It forms a secure bond merely by being wetted in water, without the need for heat, pressure, or chemicals.

Trends in the use and application of chemical binders indicate that much progress has been made in this phase of the industry. There has been a greater study of the effect of particle size and gelling agents, an increasing use of cross linking resins, use of solvent base adhesives, a reduction in the need for curing, and less use of a two-step or post-bonding operation.

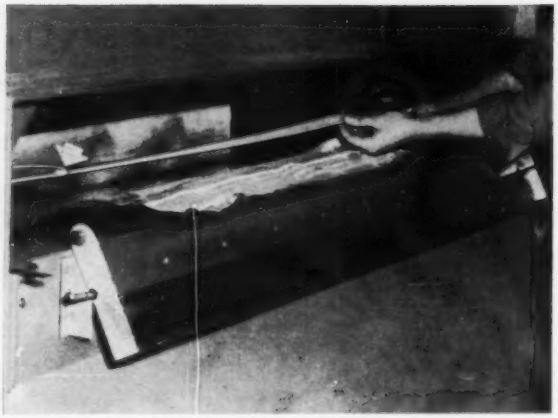
Estimated Fiber Consumption in Nonwoven Fabrics, Million Lb*

ABRASIVES Coated disks, pads, fabric	1
APPAREL Interlinings, inner and outerwear accessories, etc.	12
COATED FABRICS Automotive, furniture, upholstery, shoes, luggage, wall covering, rug backing, tentage, etc.	12
FILTERS Milk, chemical, air, oil, etc.	10
LAMINATED PLASTICS Low- and high-pressure, excluding glass	3
SANITARY AND MEDICAL Hospital and doctors' supplies, diapers, bandages, etc.	30
TAPES AND RIBBONS Decorative and industrial	19
WIPING CLOTHS Dust, polishing, shining, mopping	6
MISCELLANEOUS HOUSEHOLD Towels, napkins, drapes, shades, covers, pads, etc.	6
MISCELLANEOUS SMALL ITEMS Casket lining, permanent waving, bookbinding, etc.	3
TOTAL	102

*Natural and man-made bonded fiber (excluding chemical adhesives). These estimates are the author's, and in no way reflect the opinion, one way or another, of American Viscose Corp.



1. In first step, master roll end of glass fabric is pinned onto splicing machine. Pins assure that selvages are properly aligned.



2. Strip of "Scotchweld" No. 588 bonding film is unwound from dispenser at left; film liner (arrow) is removed by dispensing action.

Now they splice fabrics 20 times faster

Exclusive

AN AUTOMATIC cloth-web splicing technique is eliminating rejects, resulting in 100% savings, and making splicing operations approximately 20 times faster for the nation's largest glass fabrics finishing firm. In addition, the easy technique—first of its kind in the glass cloth field—has taken all of the guess work out of glass fabric splicing, simplified and speeded up packaging operations by more than 100%, and made textile splicing completely safe for the operator.

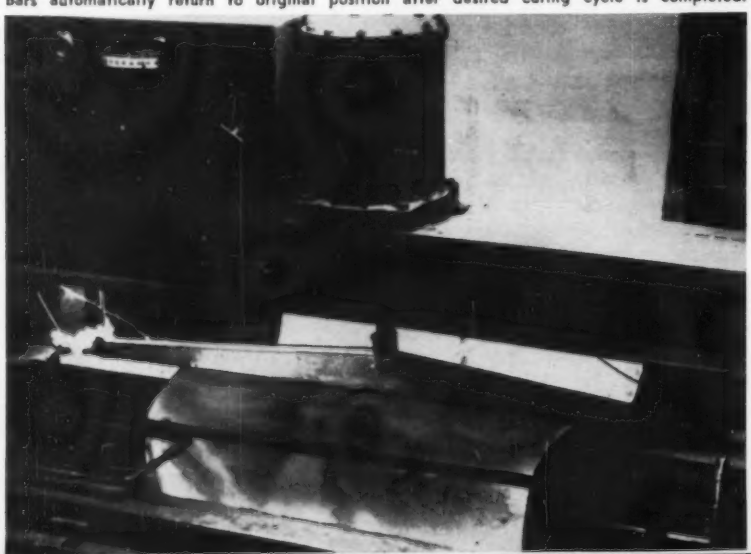
It's all done with heat-activated bonding film and a new machine that automatically activates the film, reduces downtime, and provides a permanent, thin overlap splice on the web, according to William Olliffe, production manager of Glass Fabrics Finishing Co., Cedar Grove, N. J. (a division of Hess, Goldsmith & Co., Inc.). The firm splices glass cloth for use in everything from bullet-proof vests to missiles.

Now, said Mr. Olliffe, the firm has complete control over its splicing operations, since it is able to apply the exact amount of heat and pressure needed for each splicing job, and regulate the timing of this application. Automatic devices on the machine enable the once laborious, often inaccurate, job of splicing glass fabric to be accomplished accurately with a push of a button.

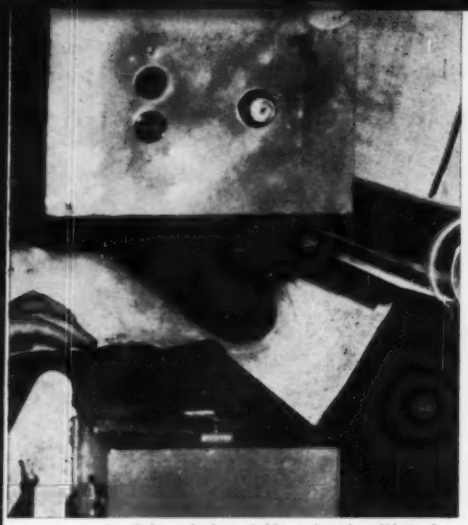
Moreover, the new method—eliminating the need for ironing or sewing of the seams—cuts re-splicing work in half since approximately 50% of the spliced fabric now goes directly to the customer, he said.

The textile splicing machine ac-

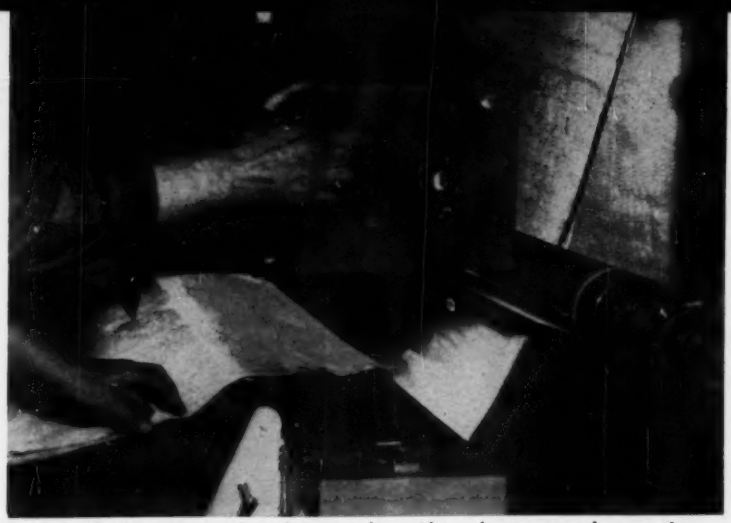
5. Heated pressure bars are pressed across seam to activate bonding film, complete splice. Bars automatically return to original position after desired curing cycle is completed.



6. End result is a thin, dependable splice, free of loose warp ends and convolutions.



3. Other cloth end (from batch roll) is then placed over bonding film to effect overlap.



4. Push of a button activates the splicing machine. Above, heat-pressure bars are in motion. With two operators, adjustment can be made to require pushing two starter buttons.

tivates the film strips with heat at the same time that it applies predetermined amounts of pressure needed for the splice. The film flows into the fibers of the fabric upon activation of its dry, thermosetting adhesive, and forms a high-strength bond. Complete curing of the splice can be accomplished in only three seconds upon activation.

Furthermore, the entire splicing cycle—including handling and placement of the cloth roll selvage on the splicing machine—is completed in only 10 to 60 seconds, depending on weight and thickness of the glass fabric. Previously, the cycle required three minutes since all of the splicing had to be done by sewing or hand ironing of the seams. This was a difficult process, of course, which frequently resulted in uneven, wrinkled, and loose yarns that necessitated re-splicing of the seams.

In fact, Mr. Olliffe pointed out, it was frequently necessary to cut off as much as three yards of fabric in front and in back of each seam due to faulty splicing. "Waste resulting from such unevenness, wrinkles, and looseness amounted to approximately $3 per roll." Since adopting the new method, however, "such waste has been eliminated since the machine-spliced seams all are even, wrinkle-free, and tight," he added.

And there no longer is any chance of the splice breaking while the fabric undergoes its finishing process. This process, which occurs immediately after the splicing cycle, is accomplished by a large finishing unit directly behind the splicing machine that automatically conveys the spliced fabric on cylinders to the packaging line.

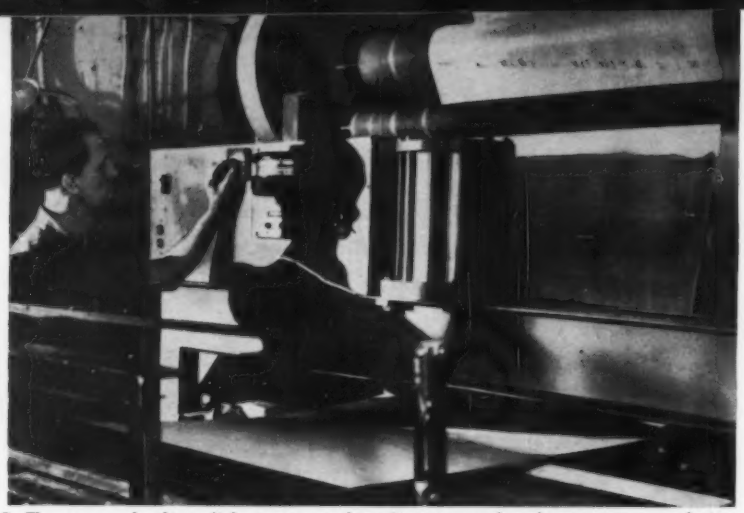
"We no longer have to worry about timing since our new textile splicer is equipped with an automatic timing device adjusted to coordinate with the dial settings on the machine's temperature and pressure gauges," Mr. Olliffe pointed out. "By simply setting the dial, the jaw of the machine can be regulated to release its pressure from the seams at just the proper time."

The "jaw" consists of two recessed bars, one above the fabric to be spliced and the other below. Operated by solenoid-controlled air cylinders, each of the bars has two heating elements ranging from 110 to 120 volts, and apply heat and pressure simultaneously.

For safety, the splicing machine has two starter buttons. If there is only one operator, only one button must be pressed to set the bars in

7. How the splice looked when the old method was used. Note bunched, uneven appearance, which often led to considerable waste.

8. The operative had to wear asbestos gloves when the fabric was ironed manually. In new method, he no longer handles hot objects.



9. There are only three dials to set on the splicer to regulate heat, pressure, and time. Splicer was developed by Minnesota Mining & Manufacturing Co. (3M), and is manufactured by Precision Machine Works Co. Machine described here is 6' long, 2' wide, and 5' high.

10. Plant Manager Olliffe holds a section of spliced glass fabric designed to protect telephone poles from woodpeckers.

motion. If there is ever need for two operators, however, both buttons would have to be pressed, one by each operator. Thus, there is complete operational control at all times.

The Splicing Operation. The splicing cycle is done in this manner:

1. Position the end of fabric extending from the finishing machine onto the surface of the bar by attaching it over the pins along the bar (*Photo 1*). The pins, in two parallel rows, keep the cloth selvages aligned properly to assure against unevenness and bunching of the web.

2. Place the bonding film across the full web width. The film strip, three-quarters of an inch wide, can be dispensed by simply unwinding it from the dispenser at the left of the operator. A take-up roll incorporated in the dispenser serves to remove the liner from the film adhesive during this dispensing (*Photo 2*).

3. Attach the batch-roll end of fabric over the film, and the end already positioned, by fastening it onto the aligning pins (*Photo 3*). The film, sandwiched between the two ends, is now ready for bonding.

4. Press the starter button (*Photo 4*) to move the bars against the film and web. The bars begin to move as soon as the button is pressed, and return automatically to their original position after the desired curing cycle is completed.

That's it! The splice occurs when the heated pressure bars contact the seam (*Photo 5*). The cycle is completed as the bars separate. The end result: a thin, dependable, bonded splice free of loose ends (*Photo 6*), far superior to the old sewn splice (*Photo 7*).

Although the machine is capable of applying up to 1,200 lb of pressure, only 50 lb are needed for most glass fabric splicing jobs, Mr. Olliffe declared. What's more, it can be set for temperatures up to 700 F, but usually operates at approximately 600 F because of the material involved. Thickness of the fabric determines application pressure, time, and heat requirements, he pointed out.

During the ironing method, heating of the old fashioned tailor iron was accomplished by a gas flame, since there was no other way to heat the iron to the necessary high temperatures. It remained in the flame for approximately five minutes. Workers had to wear asbestos gloves while removing the iron from the gas heater and during pressing of the seams (*Photo 8*). Pressing was done on an asbestos board.

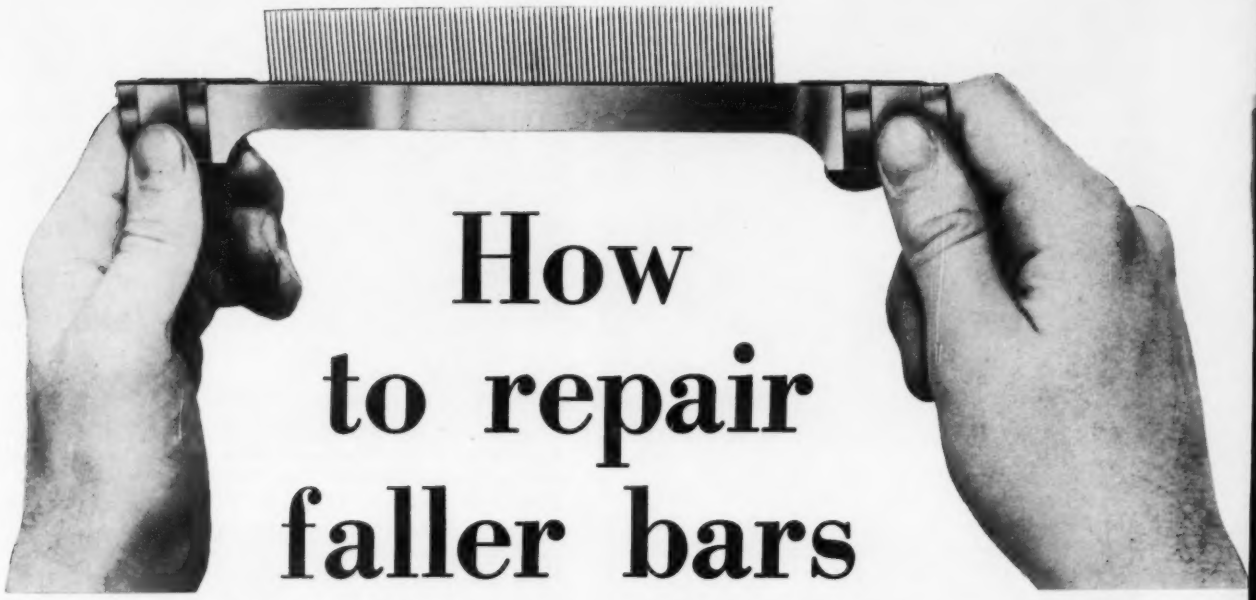
"It was just a hit and miss proposition," remarked Mr. Olliffe, referring to the ineffectiveness of the ironing method. "The seams were either half-cured or cured too much—we could not be sure just how much pressure and temperature were needed and thus failure of the seams often resulted." Now, by just setting three dials (*Photo 9*), curing problems are solved. What's more, "thousands of dollars in savings has resulted simply because a continuous flow of glass fabric now goes directly from the finisher into master cartons for shipment," he pointed out. Up to eight rolls, spliced securely together, can be inserted as a continuous roll into one carton.

Previously, only small, single rolls could be shipped because of the resplicing of each roll. It was too time-consuming and expensive, of course, to attempt master roll shipments. Now, instead of packaging fabric in lengths of only 125 yards, continuous rolls—spliced together in lengths up to 2,000 yards—can be shipped.

The firm now uses this method for splicing fabric ranging in thicknesses of 0.001" to 0.034". The machine can be adjusted to handle any fabric width and thickness, however. Designed to splice all types of textiles, it is 6 feet long, 2 feet wide, and 5 feet high, but can be altered to any size. Made of steel, it is mounted on four swivel casters to permit mobility.

According to Mr. Olliffe, installation of the method was "relatively inexpensive" considering all of its advantages, and he reported that the film costs only 9¢ per hundred inches of splice.

Results of the new method have been so favorable that the firm soon plans to install similar machines in several of its other plants. Mr. Olliffe summed up: "We know a good thing when we see it, and this definitely is the best textile splicing method we've ever seen."



How to repair faller bars

Both soldered and plastic-bonded-type faller bars for Pin Drafters may be repinned in the mill by these factory-approved procedures

Part 2—Plastic-bonded faller bars*

Staff prepared—Exclusive

WHILE the plastic-bonded faller bar found in the Model 3650, 3680, or 3700 Pin Drafter** and the Model 3730 Servo-Drafter looks very much like the soldered type, it is actually quite different—flat pins are accurately set in flexible plastic strips and the assembly is then bonded into a milled U-slot in the faller body. Consequently, the equipment and supplies required and procedure for repinning the plastic-bonded faller are quite different also.

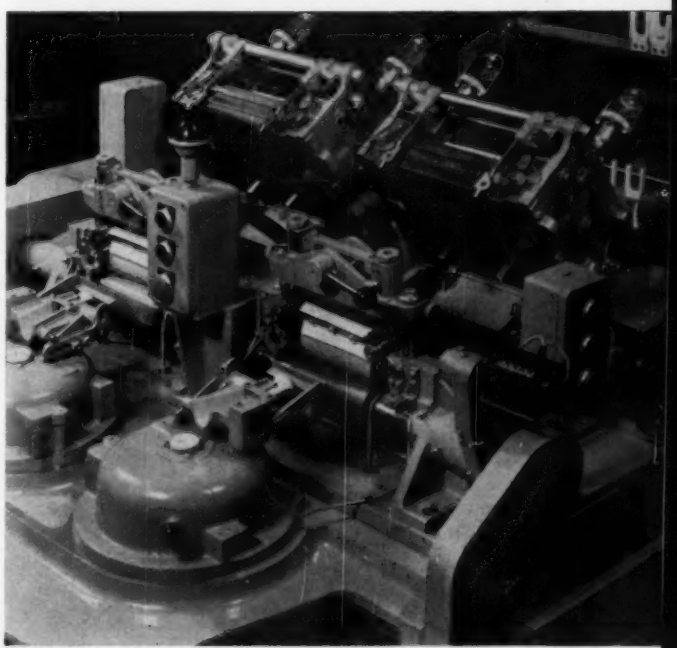
The method given here for installing new pins in the plastic-bonded type bar is a patented process of The Warner & Swasey Co. which is available on a royalty-free basis to textile mills with Pin Drafters. Southern Reneedling Works, the firm at which the information and photographs were obtained, is a licensee of Warner & Swasey for the repair and manufacture of the bars.

EQUIPMENT AND MATERIALS NEEDED

To set up a repinning operation in the mill, the following should be obtained. (Where a source is listed, it is because of the nature of the item.—Eds)

► One pinning fixture with transformer and electrical controls. Available from Precision Products Co., 8811 Maywood Ave., Cleveland 2, Ohio.

► One hood and suction device for use over pinning fixture to carry off smoke and fumes. [*Turn page*]



Close-up of the Model 3650 Pin Drafter in which plastic bonded faller bars are used.

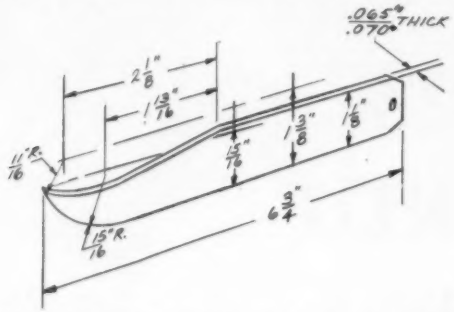
*Part 1 was published in the November, 1960, issue (pages 69-71) and contained instructions for repinning soldered type faller bars.

**Pin Drafer is a registered trademark of The Warner & Swasey Co. for its intersecting draw frames.

How to repin plastic-bonded faller bars

► One 16" or 18" square metal or wood shield for use in front of pinning fixture to protect operator from the slight explosion or puff that sometimes occurs when heat decomposes cement and pins pop out of the bar.

► Stripper blade for removing the plastic and cement from the groove in the hot faller bar preparatory to installing new pin strip. Stripper blade can be made from an old power hacksaw blade as shown in the accompanying sketch. Thickness of blade should be



a little less than the width of the slot in the faller bar. Dimensions in the sketch are approximate. The hook shape only is important.

► One closed recirculating sandblast cabinet equipped with sand blast gun and dust collector. Available from Pressure Blast Mfg. Co., Inc., 27 Pleasant St., Manchester, Conn.

► Plastic pin strips (12, 15, 18, 22, or 29 pins per inch). Available from Warner & Swasey.

► One drying oven for storing bars and strips before pinning and for curing the pinned bars. Any standard laboratory oven which provides moisture-free protection and maintains a temperature from 120 to 140 F is suitable.

► One platform balance which is capable of weighing 20-gram and 5-gram quantities.

► Small plain paper cups for mixing cement. Paraffin or other coatings will contaminate cement and prevent bonding.

► Two stainless steel chemist's spatulas with a blade about 4" long and ½" to 5/8" wide. Keep them in cement solvent when not in use.

► Two ¼" round animal bristle brushes. Do not use synthetic bristles because they will deteriorate in the cement and cement solvents. Keep brushes in cement solvent when not in use.

► One pint glass beaker or jar.

► Lint-free cloth such as denim for wiping groove of faller bar.

► Alignment clips (minimum of 12 required) for holding pin strips in place during curing. Available from Southern Reneedling Works, Inc., 713 Second Ave., Gastonia, N. C.

► One gallon minimum of any top quality non-oily cleaning and degreasing solvent.

► 100 lb of sandblast grit such as aluminum oxide #50 grit marketed by The Carborundum Co., P. O. Box 337, Niagara Falls, N. Y., under tradename "Blastite #152370819," or its equivalent.

► Cement for holding pins in bars. Designated Nureco GR-401-20, it is available from Nureco, Inc., 1100 Pontiac Ave., Cranston 10, R. I., and consists of two parts—Part A (in one quart containers) is the cement and Part B (in one pint containers) is the activator. Each part can be stored and handled separately.

► One gallon minimum of Methyl-Ethyl-Ketone (M.E.K.) for use as cement solvent. This is available through a local distributor or Harshaw Chemical Co., 820 Laisy Ave., Cleveland, Ohio.

Cost of equipment and materials needed to set up a mill repinning operation is approximately $1,000.

REPINNING PROCEDURE

A. Prepare bar to receive the new pins in the following manner:

1. Soak bar in solvent and thoroughly clean it, removing all grease, oil, fiber, and other foreign material.

2. Check bar to be certain it is absolutely straight. (A bar that is quite badly bent can be easily straightened and reused if it is straightened before the pin strip is removed. And straightening the bar with the pin strip still in place prevents damage to the walls of the slot.)

3. Buff or otherwise clean the ends of the bar to assure a good electrical contact in pinning fixture.

4. Insert bar in pinning fixture to remove old pins—pins out, lip side up.

5. Place shield in position before pinning fixture to protect operator.

6. Set pinning fixture transformer on Tap No. 1 and turn electricity on for a period of 8 to 16 seconds to heat bar. When temperature of bar is sufficient to cause cement to deteriorate and all or portions of the pin strip to pop out, turn electricity off.

7. While bar is still in pinning fixture and hot, clean pin slot with stripper blade.

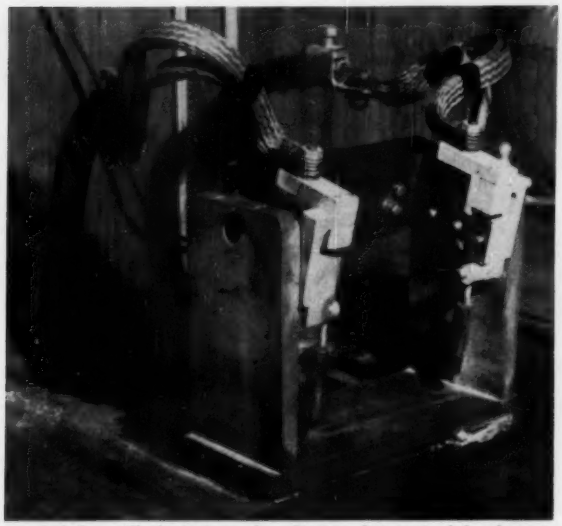
8. Remove bar from pinning fixture and check to be sure it is absolutely straight and that pin slot is of right width.

9. Sandblast slot in depinned bar to completely remove all old cement.

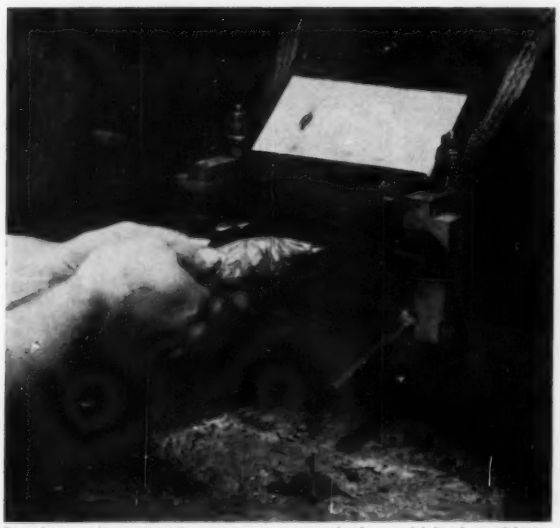
B. Cement new pins in bar by proceeding in the following manner:

1. At least 15 minutes before the cementing operation is to be started, place 10 or 12 depinned bars and the same number of plastic pin strips in an oven that has been previously heated to 100 F to dry off any moisture that may have accumulated on them. (The parts should be warm before cementing, and the work must be done in a relatively dry atmosphere. If there is any moisture on them or if surfaces are contaminated from handling, the cement will not bond the pin strip to the faller bar.)

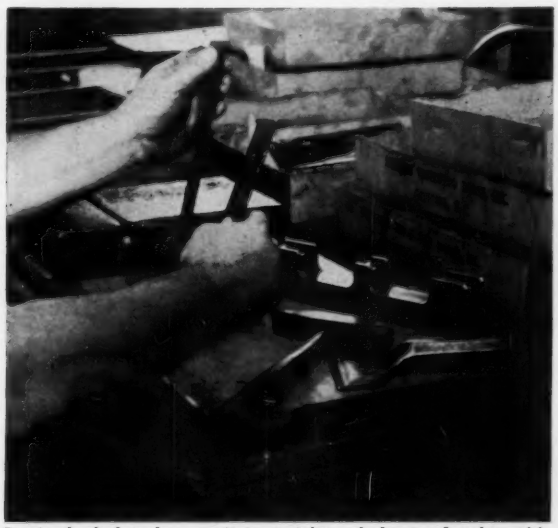
2. Prepare cement as follows: Put 20 grams of Part A (the cement) into a plain paper cup. Add 5 grams of Part B (the activator). Mix thoroughly



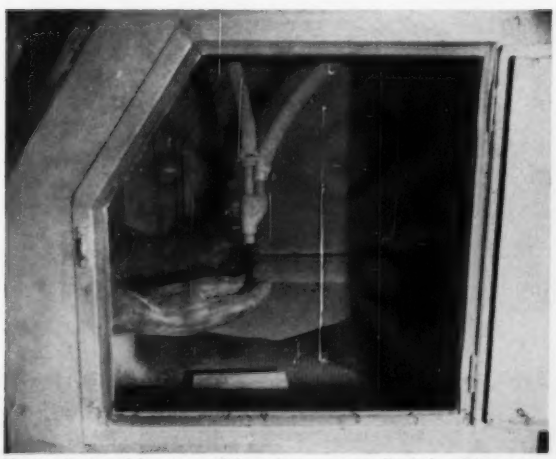
Operator at Southern Reneedling Works inserts faller bar in pinning fixture to remove pins (left photo). Note hood around machine to take away smoke and fumes of depinning operation; this is recommended for mill depinning, also. Pinning fixture in left photo is set up for mass production removal of pins from both soldered and plastic-bonded fallers. Machine in right photo is type used in mills.



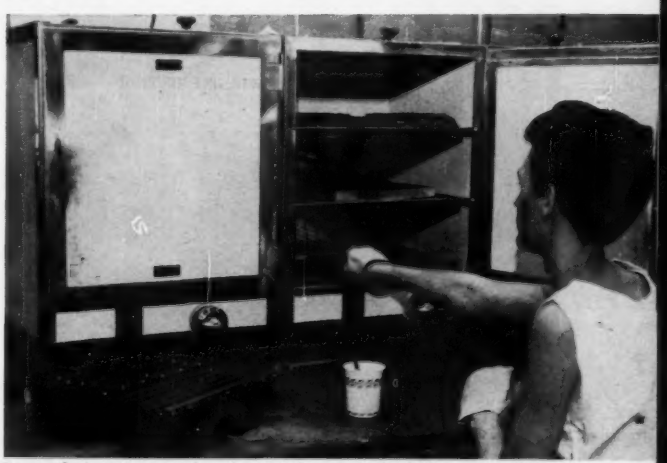
Pin slot is cleaned with an instrument made from old hacksaw blade.



Bar is checked to be sure it is straight and slot is of right width.



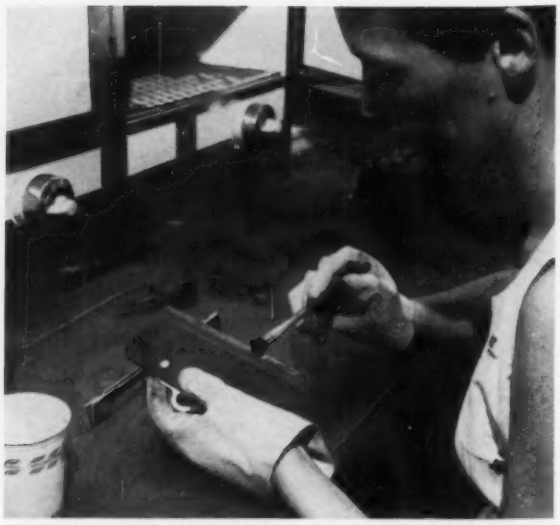
Slot in depinned bar is sandblasted to remove all of the old cement.



Bars and pin strips are placed in 100 F oven to dry before cementing.

How to repin plastic-bonded faller bars

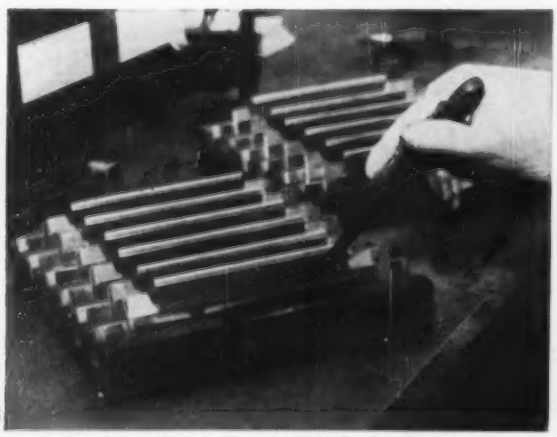
Spatula is used to wet all inside surfaces of the slot with cement.



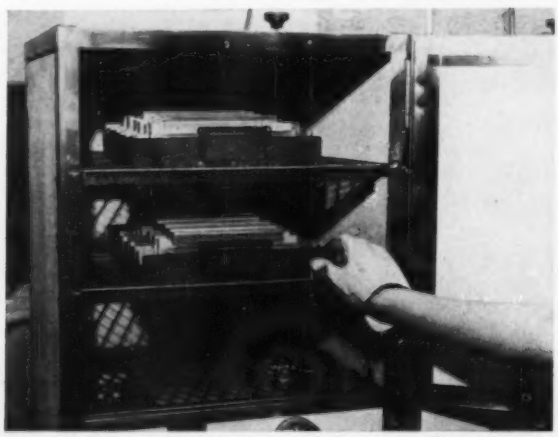
Cement is applied to both sides and bottom of plastic strip on pins.

Pin strip is placed in the slot, pressed to the bottom, and centered.

Alignment fixture holds the pin strip in place while cement sets up.



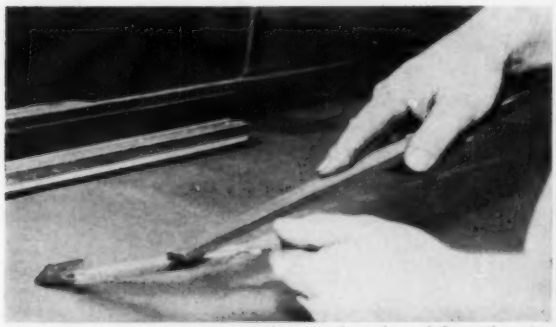
Bar is placed in rack and allowed to air dry for about five minutes.



Rack full of bars is placed in oven and the cement allowed to cure.

When bars are removed from oven, alignment fixtures are taken off and bars are placed in box to set for at least four hours before inspection.

At Southern Reneedling bars are placed in contour projector and pins checked.



After bars are inspected, cement that may have been left on them is removed. Hardened cement is like metal, so file and wire brush are used.

with spatula, but gently to prevent bubbles forming. (When mixed, the cement thins slightly and then starts to set up. So use it within 15 minutes. It has been found that an experienced operator can cement from 10 to 12 bars in this length of time, and for these nearly all of the 25 grams of cement will be required. Do not mix a smaller amount of cement.)

3. Remove a blank bar from the oven and wipe the slot clean with a piece of clean, lint-free cloth wrapped around a blade. (Do not allow cloth to become greasy or otherwise contaminated as this will prevent adhesion.)

4. Using a spatula, wet the slot of the bar with cement. (Do not fill the slot with cement, but be sure all inside surfaces of the slot are wet.)

5. Remove a pin strip from the oven, and using a round brush wet both sides and the bottom of the plastic strip with cement, being careful to avoid getting cement on pins. (At Southern Reneedling, operators use the top of an ordinary clip board to hold the pin points, leaving the plastic strip exposed for coating with cement. Also, they wear rubber gloves to avoid allergic reactions to cement and cleaning solutions.)

6. Place cement-coated pin strip into pin slot of bar, pressing it down to the bottom of the slot and at the same time centering the strip in the slot.

7. Fill slot with cement, being sure that it is flush with the bar on the ends and sides. Avoid getting cement on or between pins.

8. Position the alignment fixture to hold pin strip in place while cement sets.

9. Recheck cement to see if slot is filled. Fill if necessary. (If all portions of slot and strip were not wet, cement will not fill in properly and bond will not be complete.)

10. Place bar (pin points up) in rack on bench and allow bar to air dry for about 5 minutes. Check slot again to see if it is full of cement. Refill if necessary.

11. Place rack of bars in 115 to 130 F oven to cure cement. Keep bars in oven for period of one hour minimum to two hours maximum.

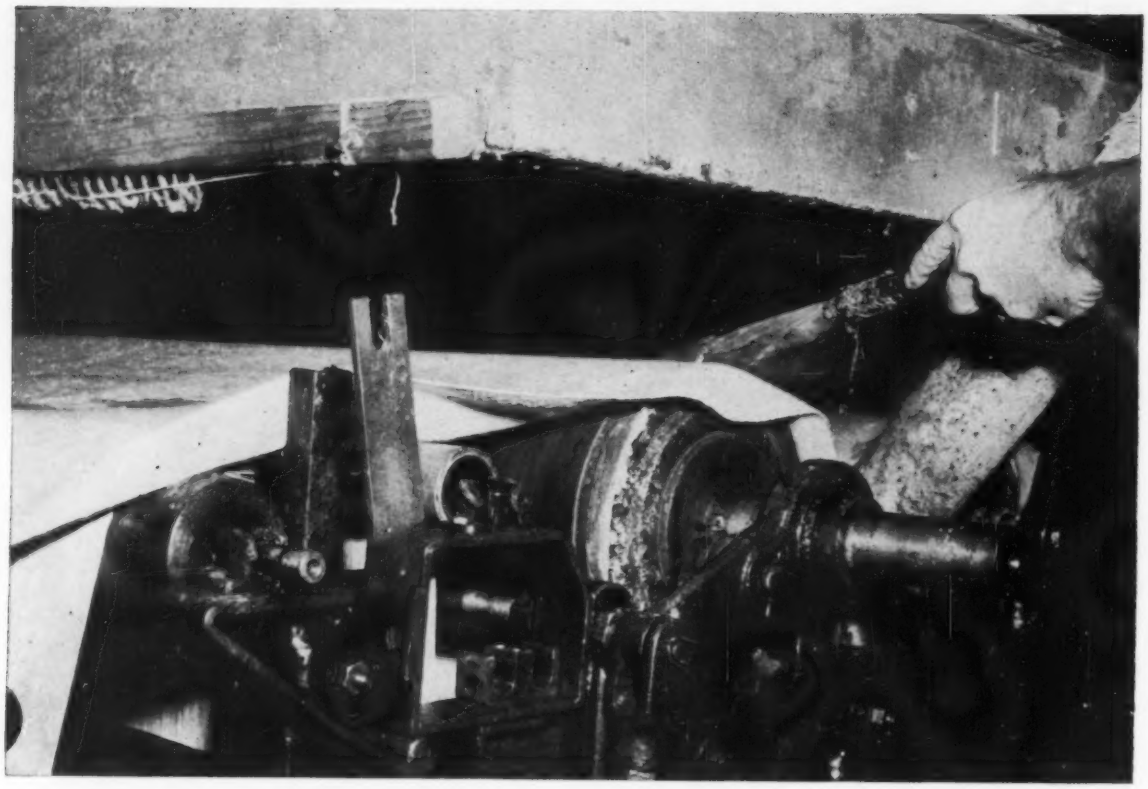
12. Remove rack of bars from oven, take off alignment fixtures, and place bars in box. Let them set for at least four hours.

13. Check slot in each bar to see if it is properly filled with cement by trying to insert a .002" feeler gauge between the plastic strip and bar. If gauge enters a bar, reject it, because it is unsatisfactory for use and the defect cannot be remedied. Defective bar must again be subjected to the entire repinning procedure. (Inspection at Southern Reneedling is more elaborate than that required in the mill. In addition to checking the slot, a contour projector is used to check alignment of pins and condition of pin points.)

14. Remove all excess cement from bars, using a file and wire brush. Before cement has set it can be removed with M.E.K. (methyl-ethyl-ketone); but after setting the cement is as hard as metal, so metal cutting tools must be used.

15. Coat bars lightly with a rust preventing oil to protect them while not in use.

"THE IMPORTANCE of following this procedure step-by-step cannot be overemphasized," Mr. Yancey concluded. "Failure to do this can result in production of so many defective faller bars that it may not be economical for a mill to continue the repinning operation."



Staff report

Size boxes and slasher production

Here's what Georgia mill men had to say about

- ☐ *Slasher production*
- ☐ *Cylinder pressure*
- ☐ *Size viscosity*
- ☐ *Pick-up variation*
- ☐ *Slasher waste*
- ☐ *Stretch*
- ☐ *Leasing frequencies*
- ☐ *Selvage ends spreading*

PROMPTLY at 9:30 a.m., October 22, Secretary-Treasurer *James L. Taylor* called the fall meeting of the Textile Operating Executives of Georgia to order. The men settled into their seats at the Harrison Hightower Auditorium on the Ga. Tech campus and prepared to take part in the scheduled slashing and weaving discussions. Dr. Taylor introduced the guest speaker of the day.

Following this opening address, entitled "The Candle of Thought Leadership," by *Paul K. McKenney, Jr.*, General Chairman *Willis James* began the discussions by introducing *Frank (Rip) Henderson* as the moderator for the slashing forum. The first topic included two "unrelated" subjects:

Slasher Production. Multi-cylinder slasher production (in yards per minute) equated to the number of size boxes used shows the production to be slightly in favor of single boxes. *Mills G* and *N* report 10- and 15-yd differentials

GA. T.O.E. ELECTION RESULTS

General chairman — Lee Wynn
Vice-gen'l. chairman — Charles Pease
Exec. committee — T. H. (Tom) Sherrill

respectively in favor of single boxes, but the figures must be qualified for the reliable pounds-per-hour yardstick is not quoted. *Mill T* also gets slightly more speed from single boxes.

A look into the production records of other participating plants reveals a more solid appraisal, productionwise: *Mill B* gets 900 to 1200 pounds per hour from either single or double arrangements; *Mill D* uses one or two as needed and notes that while speeds vary the production in pounds per hour remains fairly consistent; *Mill F* is drying 1000 lb/hr on 10-can slashers operating at 35 psi, uses one box when running 3000 ends or less, two boxes when the ends exceed 3000; *Mill H* runs all heavy sets through two boxes; *Mill L* uses one box (double-roll type) for all slashing; *Mill Q* uses one box, produces from 750 to 1100 pounds per hour, depending on yarn count; *Mill S* uses single size boxes (Griffin) and produces about 415 pounds per hour (10s to 15s yarn) with the number of ends varying from 1056 to 2000.

It is difficult to draw any conclusion from the above data, except that any conclusion so drawn could easily be misleading. The three plants that report higher speeds with single boxes quite possibly are running very light sets. But in the absence of figures, they might just as easily be running sets heavier than any of those reported.

Either way, the choice of two boxes or one box is fairly well dictated by the number of ends involved, with two boxes being used to prevent crowding and the consequent spotty, irregular, or too-light pick-up.

Someone has suffered a loss of 10 to 15 per cent in slashing speeds after a new slasher became approximately one year old, so that topic was put before the group to see if the loss is a common one. It is not.

There were fourteen mills involved with the question, or with some part of the topic, and seven reported no decline; one reported a loss of about 15 per cent; and six did not comment. There were a couple of qualifications among the negative answers, though:

Mill L has had no decline in production from its multi-can slashing, but points out that when the steam trapping or siphoning system is not working properly, the slasher loses drying efficiency and has to slow down to keep moisture content correct.

"If equipment is kept in proper working condition, there will be no drop in production," a spokesman for the firm concluded.

"There is no substitute for good maintenance," supported Moderator Henderson.

Cylinder Pressures. Some firms operate with a single can pressure; others prefer to vary pressures across groups of cans. See *Table 1* for the details.

One representative for a plant that operates with its highest pressure consigned to a middle group of cans was asked, "Why the high pressure on the middle group of three?"

"We find our sulfur colors, our dark blues for instance, undergo a shade change if the entering cylinders are hottest."

A spokesman for a second firm supported the statement with a slightly modified: "Glazing occurs on our colored yarns if the first cylinders are too hot. A shade change results." He touched off a barrage of questions:

"How do you then cool the yarn before wrapping it on the loom beam?"

"We have four big fans under the front of the slasher to do that."

"How much moisture do you leave in the yarn?"

"From six to seven per cent?"

"Can you raise the moisture content with the fans?"

"Yes."

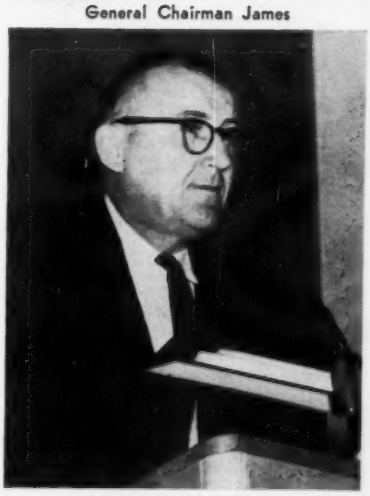
"What is the objection to putting the hot warps on a loom beam?"

"We find it offers a problem in regain. It seems to be sticky, to cling badly in weaving."

Size Viscosity. What is the best way to check size viscosity? How often do you check it? What variation do you consider reasonable?

Guest Speaker McKenney

General Chairman James



Henderson — Slashing

Cain — Weaving

TABLE 1

Can Pressures Used by the Mills

Mill	Uniform can pressures?	Remarks
A	Yes	One valve controls first four cans; a second valve monitors remainder
B	No	Nine cans controlled in groups of three with 50 psi used in middle group
D	Yes	
G	Yes	For light sets, section next to size box operates at elevated pressure
H	Yes	
L	Yes	Some sections are cut out when running light sets
M	Yes	
N	Yes	Front seven cans run 5 to 8 psi below back four when running light sets
O	No	Eleven cans controlled in groups of 4,4,3 with separate remote controls and steam and condensate headers for each section—18 psi in four entering cans; 14 psi in middle four; and 12 psi in the three delivery cans for set of 5828 ends of 23s (26 tex) at 65 ypm
Q	Yes	
S	No	On 15s (40 tex) yarns, uses 40 psi in back section, 20 psi on front section On 10s (60 tex), uses 50 psi in back section, 40 in front
T	Yes	

TABLE 2

Size Viscosity Control Practices

Mill	Method of checking	Frequency	Range considered reasonable	Remarks
A	—	—	—	Makes no check
D	Cup	4 hours	1-1½ sec	—
F	Cup	2-3 times weekly	2-3 sec	Checks viscometer
G	#2 Zahn Cup	1-2 times weekly	± 3 chart points	Uses cup to check recording viscometer on storage kettles
H	Cup	Twice weekly	2 sec	Average time: 18 seconds; size taken from storage kettles
J	Cup	Once per shift	2 sec	Checks each type of size with this frequency. Laboratory cooks sample from each lot and checks its running time through pipette
N	Zahn Cup	Once weekly	—	Gives range of ½ sec to 1 sec as variation from kettle to box
P	Cup	24 hours	2 sec	Holds variation or two seconds as standard, takes corrective action if time exceeds four seconds
Q	—	—	—	Makes no checks

The mills are quite close on the variation allowed, with most of them requiring approximately 2 seconds plus or minus. Not all reported whether size was checked at kettle or box. See *Table 2* for the details.

Mill I keeps a viscometer on the size box and likes its results. The brass cup and stop watch are used where no viscometer is involved. *Mill M* sends samples to a textile supplier, reports variation does not exceed one per cent.

TABLE 3

Slasher Waste, Front and Back

Mill	Front waste (%)	Back waste (%)
A	0.75	0.50
B	Depends on yarn counts, ends per set. Two per cent acceptable on coarse yarn numbers and pattern work	
C	Hard, 0.16 per cent; soft, 0.50 per cent	
F	0.15 to 0.20	—
G	0.19	0.44
H	0.2	0.15
L	0.12	0.50
M	24,000-yd sets run out evenly most of the time—about 5 per cent creeling waste	
N	0.5	0.5
O	Front and back average 0.32 per cent	
P	0.16	0.15
Q	Waste not classified as front and back. Hard, 0.25 per cent; soft, 0.50 per cent	

Pick-Up Variation. The variation in pick-up, from creep to running speed, seems limited to about two per cent with the average being a little less. (The same subject, discussed by Alabama Textile Operating Executives in their spring meeting of this year, drew about as many answers as there were mills involved. And two of the plants went in opposite directions. See TI for July, p. 130.)

Four plants report no change or nearly no change. *Mill H* picks up 11 per cent at creep speed against 13.5 at running speed. *Mill G* overcame the one to two per cent encountered by reducing roll pressure from 30 psi to 15 psi at creep speed. *Mill S* disengages its bottom squeeze roll at creep speed and reports encountering no variation.

Slasher Waste. What the mills consider necessary amounts of waste at the front and rear of a slasher can be obtained from *Table 3. Mill I* runs 20-beam wet sets, 5800 ends of 14.5s (40 tex), with 0.0115 per cent run-out waste. Start-up waste is 0.0063 per cent.

The average waste on dry sets, five beams, 2500 lb, 16s (36 tex) yarn is 0.0025 per cent on run out and 0.0016 on start up. *Mill S* picks up so little size on most production that waste is not separated as to front and rear. The company has run approximately 1,650,000 pounds of slasher production over seven-month period with a period average of 1.5 per cent waste, feels that positively driven creels help with the control.

Stretch. In three instances, slasher output is checked against input through built-in slasher stretch indicators. Others mount yardage counters on a couple of points (the entering roll in the size box and the delivery roll are two popular ones) and calculate the difference in readings as per cent stretch. Some prefer to measure the stretch from the rear section beam to the delivery roll.

The percentages reported by each mill are in *Table 4*.

Leasing Frequencies. How often do you run leases on slashers, especially with heavy sley goods? See *Table 5*.

Selvage Ends Spreading. What is your method of combatting ends spreading out on high-speed slashing? The topic includes a request for kind of yarn, slashing speeds, number of ends, and size pick-up. But an examination of the answers does not reveal a correlation between the difficulty and any one set of conditions. There are several suggestions for eliminating it.

One involves the use of a wire guide between rolls to keep the sheet contained. The firm making the suggestion *(Mill A)* also installed longer (1.5") rolls, runs up to 6710 coarse ends (11.5s to 26s) at speeds of 60 to 130 ypm, and picks up 12.5 to 14.0 per cent. *Mill B*, running up to 9000 ends of cotton yarns with up to 10.5 per cent pick-up, and with speeds of 55 to 60 ypm, recommends a static eliminator.

Mill H has little such trouble, but has traced it to a high section-beam selvage and to a top yarn-wound squeeze roll being too full. *Mill L*, which also runs heavy sets with 12.5 per cent pick-up, traced the trouble to hardened ends on squeeze rolls. The rolls eventually become slightly larger in the center and work the ends toward the selvages. Buffing cures it.

TABLE 4

Stretch and Related Data

Mill	Stretch (%)	Yarn counts	Number of ends	Remarks
A	1.5	11.5s to 26s (52 tex - 23 tex)	792 to 6710	Produces 82 styles including sheetings, bedspreads, twills, sateens, drills.
B	1.5 to 2.5	1.4s to 20s (560 tex - 30 tex)	392 to 9000	Produces 196 styles, has 400 looms on denim
C	1.3	4s to 22s (150 tex to 26 tex)	1400 to 6000	
D	2.0	12s to 40s (50 tex to 15 tex)	1800 to 7000	
F	1.5	13s to 25s (46 tex to 24 tex)		
G	1.0 to 2.5	avg 22s (26 tex)	—	Uses 1.0 to 1.5% stretch on sheetings, 1.5 to 2.5 on twills, gabardines
H	2.0	17.25s (34 tex)	5556	
I	1.5 & 3.5	14.5s & 16s (40 tex & 36 tex)	5800 & 1520	Uses 1.5% stretch on dry work and 3.5% on wet work
J	0.75 & 1.5	9.50s to 34s (64 tex to 17 tex)	1750 to 10,000	Uses 0.75% stretch on print cloths, 1.5% on wide sheetings
L	2.0	8s to 16s (72 tex to 36 tex)	1200 to 4700	Produces osnaburgs, flat ducks, industrial fabrics
M	1.5 to 2.0	14s & 16s (42 tex and 36 tex)		
N	1.5 to 2.0	14.5s & 25s (40 tex & 24 tex)	2286 & 6000	
O	1.5 to 2.0			
P	1.75	26s & 31s (23 tex & 19 tex)	700 to 4800	
Q	1.5 to 2.0	10s to 30s (60 tex to 20 tex)	4000	
S	1.5 to 2.0	10s & 15s (60 tex & 40 tex)	1056 to 2000	

TABLE 5

Leasing Frequencies

Mill	Frequency
A	Every warp
B	Every two warps (required), operative may run more
C	Two or three times per set
D	Every warp
E	Once each 7000-yd set
F	Every warp
G	Every other warp (required), oftener if needed
H	Every third loom beam, oftener if necessary
I	Every warp
M	Each loom beam, oftener if necessary
N	Every doff on poplins and cords; every third beam on draperies and Canton flannels
O	Varies with yarn count and yards per beam. Lease strings run from all beams in creels every 1200 yards on coarse counts; every 2300 yards on medium counts
P	Varies, with running conditions, from once in three warps to every warp
Q	Every 6000 yards

Wash-and-Wear up-to-date

The 9th Chemical Finishing Conference

Staff report

Godfrey S. Rockefeller, left, president of Cranston Print Works and president of the National Association of Finishers of Textile Fabrics, served as general chairman of the Ninth Chemical Finishing Conference. **Leonard Smith,** right, is director of utilization research for the National Cotton Council, Conference sponsors.

ALTHOUGH more than 1.9 billion yards of broad woven cotton fabrics were finished for crease resistance and wash-wear properties in 1959, representing an increase of about 25% over 1958, ideal finishing agents and processes have not yet been developed. "We are approaching the limits of our present knowledge and there is great need for fundamental research to provide the information on which we can continue to build."

These observations and opening remarks of general chairman Godfrey S. Rockefeller, president of the National Association of Finishers of Textile Fabrics, outlined the theme of the 9th Chemical Finishing Conference, held on September 28-29 in Washington's Hotel Statler, which attracted more than 350 scientists, finishers, and chemical manufacturers.

While many of the papers emphasized theories underlying the application of finishing agents, the latest technological advances in finishing for easy care and other properties also provided subject matter for discussion.

Research Opportunities for Cotton

In an opening paper, "Market Potential for Cottons with New Properties," Frank A. McCord of the National Cotton Council reviewed cotton's present status in various markets and pointed to the need for developing or improving such properties as warmth, luster, tensile strength, and soil resistance as a means of increasing cotton consumption.

An examination of consumption trends and patterns within major use classifications indicates that industrial uses for textiles no longer represent a healthy growth market. During the 13-year period from 1947 to 1959, little or no gain has been made in total fiber consumption, and nontextile materials have made substantial gains against textiles. The volume of cotton consumed for industrial uses has dropped from 2.7 million bales in 1947 to 1.7 in 1959. Cotton's share of the market declined from 44% to 25%. The encouraging thing about the industrial market for cotton is that its loss potentials cannot exceed the 1.7 million bales now utilized while the gross gain potential is equal to the almost 5 million bales of other materials used.

In household uses, the performance of textiles has been more encouraging. The total market expanded from the equivalent of 3.7 million cotton bales in 1947 to 4.9 million bales over the period, but cotton's share of the market dropped from 56% to 51% of the total, the result of competitive losses in rugs, blankets, draperies, and upholstery fabrics.

Apparel represents the real growth market for domestic textiles, Mr. McCord said. Total fiber consumption in apparel items increased from 4.8 million bale equivalents in 1947 to 7.3 million bales in 1959, a gain of 2.5 million bales. Cotton consumption increased from 2.7 million bales to 4.4 million, a gain of 1.7 million bales. Perhaps even more significant, at the very time that a host of new synthetic fibers were making a strong bid for apparel applications, cotton chalked up competitive gains against other materials. In 1947, cotton accounted for 56% of the materials utilized in apparel; in 1959, cotton's share of the apparel market was 61%.

As for the future of cotton, constant improvements in quality and reductions in costs of raw cotton will strengthen its position in domestic textile markets. Since 1947, changes have occurred in the domestic market for cotton to place it in a more advantageous position. In that year, industrial uses accounted for 36% of cotton consumption, household uses for 28%, and apparel uses for 36%. In 1959, industrial uses accounted for only 19% of cotton consumption, household uses took 29%, and apparel items 52%. Thus 81% of domestic

cotton consumption is now in the hundreds of items which make up apparel and household classifications, in uses which are most responsive to research and promotion. Improvements in such properties as warmth, luster, tensile strength, and soil resistance would do much to increase cotton consumption in uses where these properties are significant.

Improvements in warmth properties comparable to wool would strengthen cotton's position in markets now consuming 655 million pounds of cotton annually, opening up gain potentials equivalent to 728 million pounds, in areas where cotton has price advantages.

Improvements in luster comparable to those of major competitors, and at competitive prices, would strengthen cotton's position in markets now accounting for 2.7 billion pounds of cotton annually, opening up gain potentials equivalent to 1.8 billion pounds yearly. This goal presents some difficulties to research since there appears to be no satisfactory method of achieving the wide range of luster desired at a competitive cost.

If tensile strength could be increased by 25-50%, without injury to other desirable properties, this would result in many competitive advantages for cotton. A higher strength-to-bulk ratio, for example, would strengthen cotton's position against the synthetic fibers, particularly against the noncellulosic fibers, in the huge industrial market.

Although cotton launders well, resistance to soiling in many uses is a major consideration. These include rugs, rainwear, draperies, and heavy bedspreads, not to mention dress shirts and blouses. Improvements in resistance to soiling would strengthen cotton's position in outlets now consuming more than 1 billion pounds of cotton textiles annually and open up gain potentials in uses now consuming about 1.4 billion pounds of competing materials.

Crosslinking with Derivatives of Divinyl Sulfone

As a crosslinking agent for cellulosic fabrics, divinyl sulfone (DVS) produces excellent wet crease recovery and dimensional stability, with moderate improvements in dry crease recovery. But its physiological behavior and its toxicity prevent its use on a commercial scale. The Research Laboratories of J. P. Stevens & Co. have carried on extensive research in the utilization of DVS derivatives, prepared in their own laboratories, which are relatively nontoxic, nonvolatile, and water soluble; and capable of being applied to fabrics by simple padding procedures. The addition of the sulfone to cellulose can be carried out under controlled conditions and all dangerous aspects of the DVS reaction can be avoided.

The results of applying DVS derivatives to cotton fabrics were reported on in a paper presented by Giuliana C. Tesoro, "Chemical Modification of Cotton with Derivatives of Divinyl Sulfone," also authored by Paul Linden and Stephen B. Sello of the J. P. Stevens Laboratories.

Of the derivatives of DVS that were prepared and studied, three types of compounds were found to exhibit the desired physical, physiological, and chemical properties. These were:

1. Sodium thiosulfate compound
2. Pyridinium chloride compound
3. Compound derived from a bis secondary amine

These compounds are odorless, water-soluble solids which do not cause burns or irritation when in contact with the skin.

Experimental Procedures on Fabric. Samples of fabrics (80 x 80, 118 x 56 cotton twill, and Type 180 sheeting) were conditioned and then padded with an aqueous solution of the sulfone at room temperature. Then the fabrics were dried at temperatures of 160-220 F. After drying, the fabrics were padded through the selected alkaline solution, rolled smoothly, and allowed to stand at room temperature for the prescribed time. They were then transferred to a dilute acetic acid solution, washed with nonionic detergent at 110-120 F, extracted, and conditioned until equilibrium was reached.

The fabrics were then evaluated and results noted, which were as follows:

Crease Recovery. Wet crease recovery is greatly increased, being accompanied by a moderate increase in dry crease recovery. The increase in crease recovery depends on the extent of modification.

Tensile Strength. In general, the percentage decrease in tensile strength is in the range observed for most known crosslinking treatments. Wet tensile strength is approximately equal to the dry tensile strength.

Tear Strength. The decrease in tear strength is generally severe when no softener is used and depends somewhat on fabric construction. The wet tear strength of treated fabrics is approximately equal to the dry tear strength.

Effect of Softeners. Softeners and lubricants were found to increase the tear strength and abrasion resistance of the treated fabrics significantly, with a slight decrease in tensile strength. Silicones, cationic softeners, and several types of polyethylene emulsions were studied and proved effective. The best results were obtained with nonionic polyethylene emulsions, both in terms of initial performance and resistance to laundering. The effect of a given softener, however, differs for different fabrics.

Behavior in Laundering. Since the crosslinks become an intrinsic part of the cellulose molecule they are not removed by repeated laundering cycles and the properties of the treated fabrics are not altered.

Resistance to Bleaching Agents and Hydrolysis. Chlorine retention and chlorine damage are nil. Stability to acid hydrolysis is equally high. Stability to alkaline hydrolysis is moderate. At increasing

concentrations of NaOH, significant decrease in sulfur content is noted after heating.

Wash/Wear. Wash/wear performance of treated cotton fabrics is vastly improved after treatment. Even at moderate levels of treatment (wet crease recovery, 240°-250°), line drying after the spin cycle in the washing machine gives excellent wash/wear ratings (4.5 - 5.0). Tumble drying gives good ratings (about 4.0) although dry crease recovery is only about 200° or lower.

Crosslinking Cotton with Formaldehyde and Glyoxal

Although formaldehyde is an efficient, non-nitrogenous crosslinker it has not found commercial application because of its unpleasant odor, the variability of results that it produces, and the excessive loss of fabric strength. The finishing industry has learned to live with the problem of odor produced by formaldehyde resins, and variability of results can be controlled if the causes are understood. However, the problem of strength losses has proven insurmountable in commercial applications.

Studies in crosslinking cotton cellulose with formaldehyde and glyoxal, aimed particularly at determining the factors which affect wet and dry crease recovery and the ratio of these values, were the subject of a paper, "Changes in the Physical Properties of Cotton on Crosslinking," authored by Fred H. Steiger, Stella Y. Wang, and Melvin D. Hurwitz, of Rohm & Haas Co.

The authors' investigations showed that the poor crease recovery-strength relationship exhibited by cotton reacted with formaldehyde by a dry curing process is primarily a function of the formal linkage and is not due to the degradative effects of acid.

Their work also showed that the inconsistencies in results of treating cotton with formaldehyde are associated with the slow rate of hemiformal formation in the padding bath.

When cotton in the wet state is crosslinked with glyoxal by means of hemiacetal linkages, without heat or catalysis, the crease recovery-strength relationship obtained is similar to that obtained when dimethylolethyleneurea is cured on cotton. These results, when compared with formaldehyde, show that a sharp change appears to take place when going from a three-atom to a four-atom crosslink. Little change occurs thereafter. Furthermore, the strength loss produced by cured dimethylolethyleneurea is comparable to that obtained from uncured glyoxal in the absence of those degradative effects associated with the hot, acidic curing of thermosetting finishes.

The ratio of wet to dry crease recovery suggests that the areas of cellulose and/or the hydroxyl groups which are involved when cotton is crosslinked in glyoxal solutions are the same as those involved in the dry curing of crosslinkers. A high wet to dry crease recovery ratio, evidently, requires that crosslinking at some stage take place in a highly swollen condition, a state far beyond the 100% swelling found during the application of typical aqueous cotton creaseproofing reagents.

The thesis that different areas and/or hydroxyl groups are involved in attainment of wet and dry crease recovery is further supported by experiments in which dry crease recovery was introduced independently of the high wet crease recovery previously attained in a highly swollen stage.

How and Where to React Cellulose?

Mechanical and chemical finishing of existing cellulosic fabrics are basically limited in value if they continue to be the only means of obtaining completely washable and wrinkle-resistant fabrics with no loss of other desirable properties. If the performance of cellulosic fibers is to be improved it will be necessary to devise new geometric fibrous structures or to modify existing structures so that they will best utilize basic fiber properties and be more receptive to chemical and mechanical finishing processes. While quantitative data are lacking on the structural contributions of a fabric to shrinkage control and wrinkle resistance, much is known about the contributions of chemical processes on the performance of a given cellulose fabric structure.

These observations served as an introduction to a paper, "Crosslinking Mechanisms in Cellulosic Fibers," presented by D. D. Gagliardi, of Gagliardi Research Corp., who centered his discussion on the mechanisms by which chemical substances produce both dimensional stability and wrinkle resistance. Materials which accomplish these properties contain at least two highly reactive functional groups and these are all reactive with the hydroxyl groups present in polyols and alcohols.

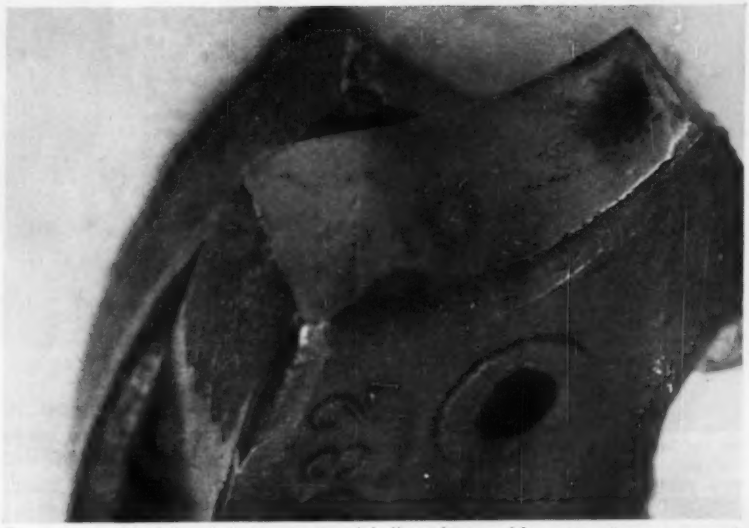
"It cannot be a coincidence," Mr. Gagliardi stated, "that the thousands of compounds which stabilize and wrinkleproof cellulosic fabrics are all very reactive with hydroxyl groups and all must be at least difunctional to perform."

The question whether resins or pure crosslinking of cellulose is involved in producing dimensional stability and wrinkle resistance is resolved from experiments on mono versus polyfunctionality; from the use of compounds that have no resin forming properties; from the direct esterification of cellulose with citric acid to produce wrinkle resistance; from studies on competing reactions between the crosslinking agent and cellulose hydroxyls and an interfering polyol; from the measurement of the accessibility of different compounds in linen, cotton, and rayon; from the studies on the influence of urea on the swelling and decrosslinking of original and crosslinked cellulose; from the studies on the alkaline and acid wrinkleproofing experiments with dialdehydes and acetals; and from the ineffectiveness of nonhydroxyl reactive resins and compounds in

Continued on page 127

GAUGES in Draper loom maintenance

Article 10—Finding and keeping adequate picking power*



Cam toe wear (duck loom) that suggests pick ball overhang and bumper action were correct.

Staff prepared Exclusive

ALONG with such twisting, the shoe begins to slip instead of roll along the foot. And as soon as the wear becomes noticeable, it is improbable that there is any parallel action left in the parallel motion. Rebuild these without mercy. And just for the fun of it install a new picker and stick. Then reach for the "hump" gauge.

Position the loom near top center, and ready to pick from the motions just rebuilt, set the "hump" gauge between the breast beam at front loom horn and the back box plate, tighten the lay against the gauge and set the brakes.

Take a good, long look at the pick cam toe. If the wear pattern shows greatest along the inner edge and over the long portion of the toe, the cam hub is too far from the pick shaft. If the wear is most visible on the opposite edge (nearest the pick shaft), the hub is too close to the pick shaft or the pick shaft has worked too high above the cam shaft. There isn't much room for the latter condition, as adjustment up and down is greatly restricted on the X series. But it can happen.

Probably, if the wear is restricted to one of the edges, the toe will perform acceptably in a loom that is properly set to the gauges, and it will be safe to trust it for some time. A cycle or two of experience will make the decision easy—a duck loom may refuse to run with as little as a ⅛" worn from the toe. But if doubt remains, replace it while the warp is set out of the way and access is easy.

Position the adjusting screw so as to leave most of its range unused, place the cam gauge on top the rim and with the lip touching the cam pocket. Rotate hub and rim until the edge of the gauge above the lip meets the cam ball. Tighten the hub slightly, and turn the loom until the ball rests on top of the toe.

The loom is now ready for the critical overhang setting, and if the fixer is supplied with the new machined points and corresponding gauge, he is in luck. Otherwise, there is nothing left but to approximate an ⅛" overhang by tapping the hub along the shaft to the "correct" position. Experienced fixers "eyeball" this setting, arguing that there is no reference point on the old toes that will give such uniform results as their eyes do.

The idea of the overhang is to place the effective cam action a distance from the pick shaft fulcrum that will give uniform throw to the pick ball. With this in mind, proceed to lay an ⅛" thickness of some material against the outermost point of the pick cam and parallel to the floor. Move the hub to line up with the inner face of the ⅛" gauge. Turn the loom back to the pick point, insert the "hump" gauge, and recheck the pick point setting with the cam gauge.

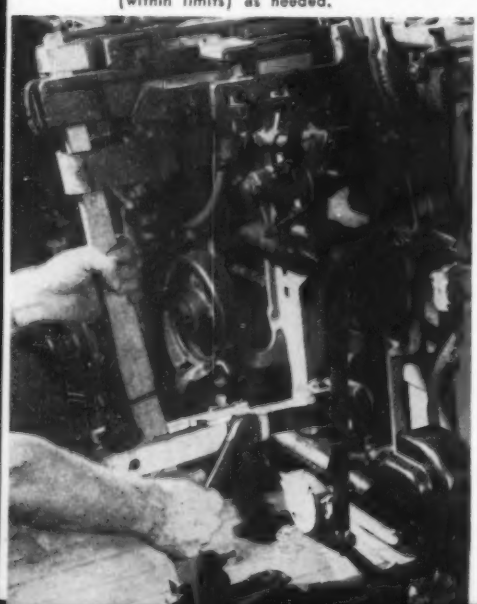
If all's well, the pick ball will now move upward with any forward movement of the crankshaft, the start of the pick. But to make sure it does, turn the adjusting screw to make the cam toe snuggle up to the pick ball. Later, with the picker stick ready to pick, it may be necessary to change this slightly. But it is one of those things the experienced fixer can set with the first effort and thus save another trip under the loom. With the pick ball resting on top of the cam, toe, run the adjustable pick shaft stop thumb tight against the bumper and lock there with jam nut.

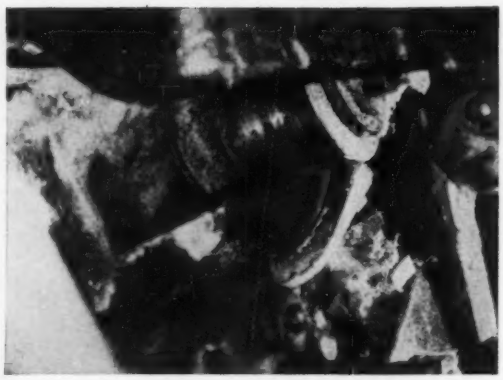
Install the lugs, pull the picker stick back to the end of its slot,

*The first article in this series was published in the January, 1960, issue. Parts 2, 3, 4, 5, 6, 7, 8, and 9 appeared in the February, March, May, June, July, September, October, and November issues, respectively. After the complete series has been published, the articles will be reprinted in book form.

Set the lug the proper distance above the heel bolt, measuring from the heel bolt to same position on lug every time.

Time the picking motion by lifting the pick arm as high as it will go. Later, it is let out (within limits) as needed.





An example of incorrect pick-ball overhang and accompanying wear pattern. Note the wear extending along the inside edge of the toe and suggesting that the cam is too far from the pick shaft. In this case, the cam is approximately 1/4" off its correct position of 1/8" inside the outer end of the pick ball.

and tighten the lugs against it. Hold the picker stick once more against the back of its slot and turn the loom forward by hand, carefully. The slightest movement of the loom should be felt in the hand holding the picker stick. Move the cam adjusting screw until it does.

As a double check, go over the motions again and tighten every bolt—"pull them as tightly as you can, then turn them one round more."

As the loom is returned to production, it may be necessary to lower the pick arm slightly to give ample power.

Cam types with the adjusting screw positioned under the flange of the cam toe present a special problem that must be watched for. As the adjusting screw is backed out to rotate the cam, it has been known to lift the cam toe slightly instead of taking all its motion in rotating the assembly. Enough of this is inclined to give erratic results with an occasional cam imparting too much power.

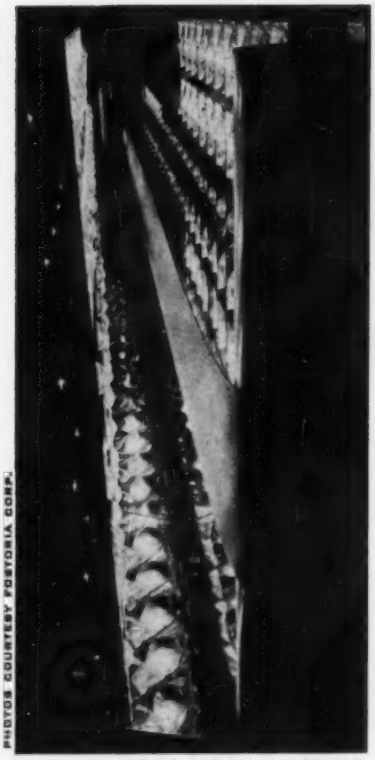
Job Breakdown

(outline only)

1. Stop loom on front center, shuttle in left-hand box, set brakes and turn power off
2. Remove picker, picker stick, parallel motion, and lugs
3. Remove grease fitting from pick ball cap screw, back out cap screw, catch cap screw, washer, and pick ball
4. Loosen bolts in rear pick shaft box, remove grease fitting
5. Remove pick arm
6. Back off nuts from front pick shaft box, remove grease fitting, slide bearing free of bolts, leaving them in loom side
7. Slip box off front end of pick shaft, replace nuts and washers on bolts
8. Slide pick shaft out of rear box
9. Remove nuts from rear pick shaft bolts and slip box off, returning nuts to bolts and leaving them in loom side
10. Remove pick shaft
11. Remove pick cam toe
12. Loosen cam hub on shaft
13. Inspect, replace all worn parts in the motions dismantled
14. Replace pick shaft in boxes and secure
15. Return pick arm to shaft, adjust to shortest length, tighten
16. Install pick ball, washer, cap screw, grease fitting
17. Using "hump" gauge and pick timing gauge, cam, position hub
18. Drift hub to allow 1/8" pick ball overhang, lock pick shaft bumper screw thumb-tight against pad
19. Recheck step 17
20. Replace parallel motion, stick, and picker
21. Hook up lugs
22. Make last-minute adjustments in picking point, set lugs

(This ends the discussion of loom power. Look for information on the transfer motion to begin soon.—The Editors)

Then, with "hump" gauge in place and with cam toe snug against pick ball, pull the picker stick to end of its slot and tighten the lug snugly against the stick.



PHOTOS COURTESY FOSTORIA CORP.

Interior view of infrared oven, looking directly up. Highly reflective interior gives illusion of lamps along sides of the oven.

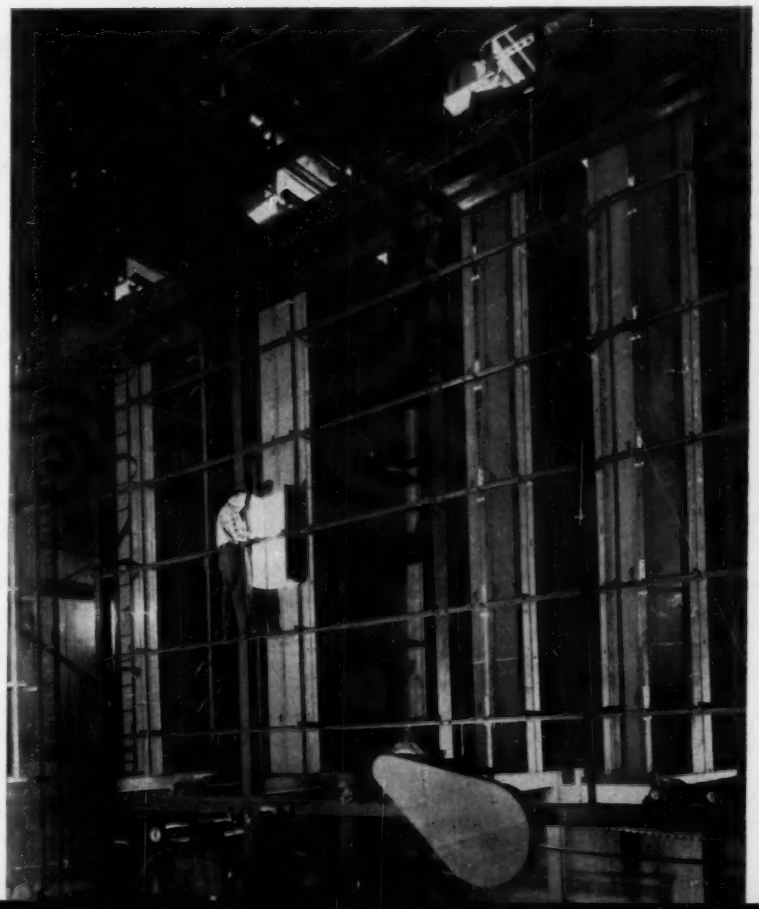
They like infrared drying

Low operating cost, close control, and versatility are some of the reasons that Globe Woven Belting Co. is sold on its new infrared drying system

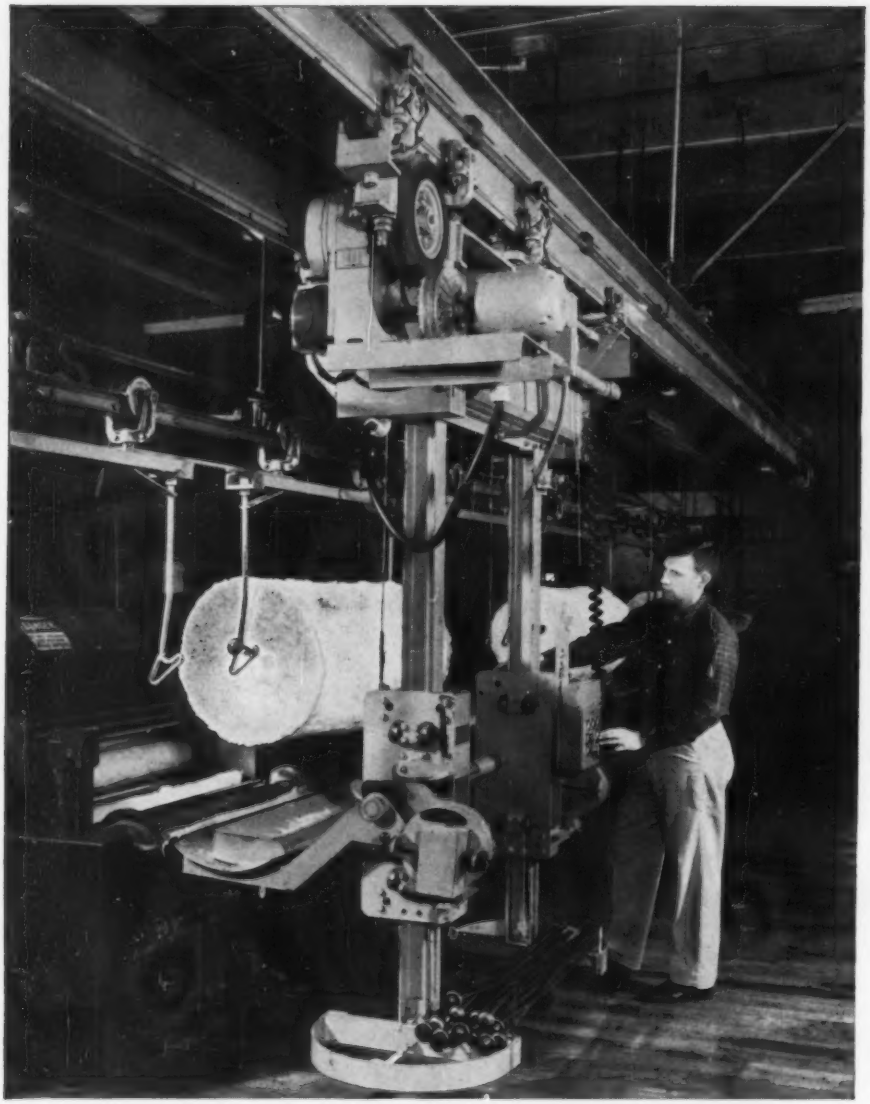
Exclusive

GLOBE Woven Belting Co., Buffalo, N. Y., recently installed an infrared drying system, consisting of four tower dryers, each with a total heating area 66 inches wide by 22 feet high. Used in the processing of impregnated fabric belting of various widths, weights, and types, each of the four ovens can accommodate 144 infrared lamps up to 500 watts in size.

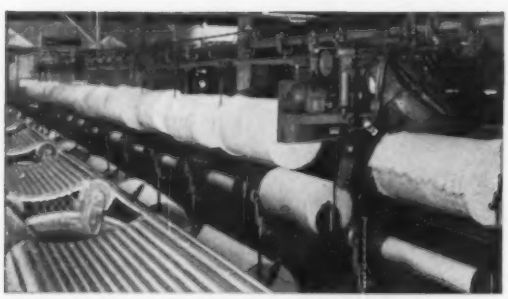
Operating Advantages. The infrared system offers a number of important operating advantages over steam drying. Since closer control of heat for different belt widths, types, and coating thicknesses is possible, the ovens pro-



Infrared system for automatic drying of impregnated belting, installed by Fostoria Corp. at Globe Woven Belting Co., Buffalo, N. Y., consists of four tower dryers, each with a heating area 66" wide and 22' high. Each oven is divided into six heating zones, which saves power and permits closer control of heat for different belt weights and coatings. Ladder, catwalk, and access doors along full height of each oven facilitate inspection and maintenance.



1 Tender serves 12 (or more) pickers



Monorail Train when fully loaded travels automatically throughout the card room. Card tender can manually stop train at any position to creel the cards. High velocity ceiling fan traveling with train keeps ceiling clean.

Lifts..Weighs..Handles Laps
cuts cost of lap handling

This Lap Balance and Lift Car not only checks lap weight but also lifts the lap from the picker to an American Monorail lap handling system. The operator is never required to lift the lap, so consequently the weight of the lap may be increased as desired.

This machine automatically positions itself to receive the lap when it is rolled a few inches out from the picker. After checking lap weight and automatically placing the lap in the carrier, the machine automatically positions itself in front of the next picker to repeat the cycle.

AMERICAN MONORAIL © A.M.Co. 1960

Engineered Automatic Cleaning and Handling Systems

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(IN CANADA – Canadian Monorail Co., Ltd., Galt, Ont.)

OVERHEAD HANDLING EQUIPMENT

MEMBER OF AMERICAN TEXTILE MACHINERY ASSOCIATION

duce a more satisfactory end product in less time.

Each of the four ovens is zone switched for a working width of 24, 48, or 68 inches with zones individually controlled by selector switches on the panel board. In addition, lamps in the upper and lower halves of each oven can be cycled independently from full to half voltage to produce varying rates of heat in either the product climb to plateau or in the level for soak heat. The latter control is secured by means of percentage timers located on the opposite side of the room.

Cycling from full to half voltage eliminates the current surge ordinarily associated with tungsten wire heaters and at the same time overcomes the complete absence of heat which would occur if the lamps were cycled from on to off. By cycling from full to half, the heat in each half of the oven can be effectively (and instantaneously) varied from one-third to full wattage of the particular lamps being used in the sockets. In this particular installation, 500-watt lamps are used in the high intensity ovens and lamps of lesser wattage in some of the other ovens.

Since there is a variation in product load of over 1,000 per cent from the smallest and lightest belting to the largest and heaviest, the closer control offered by the electric radiant heating ovens is a distinct advantage to Globe Woven Belting in producing a better quality product than could be produced with steam heated ovens. The power density or working width of the infrared ovens can be changed instantly to meet with new working conditions.

In addition to producing a superior product, the closer control possible with the infrared ovens has another important advantage. Since heat output can be accurately regulated according to the particular width, weight, and type of belting being processed at the time, considerable power savings are effected since there is no heat waste. The immediate response of the equipment on start-up results in additional power savings and further improves control.

Controlled Air. Controlled air is introduced into each oven in sufficient quantity to dilute the atmosphere below any hazardous point should solvents be used in the impregnated belting, or to dilute the atmosphere to the point where evaporation of moisture would readily take place if moisture evaporation is desired. Air is first introduced into each oven behind the reflectors where it is preheated. Simultaneously, this air serves to cool the reflectors and lamp necks to give them exceptionally long life.

This air circulation meets with requirements of all insurance authorities, even for solvents. Air movement is sufficiently low to avoid whipping and slapping of the fabric belting inside the oven, as formerly happened with steam ovens. Thus, the infrared ovens are more readily able to handle the drying of wider and lighter gauges of fabric than was possible with steam drying.

Automatic Control. The infrared drying system is controlled by means of two double, totally enclosed J. I. C. control panels. Selector switches for heat zone width are located on the front of the control panel. Pilot lights indicate status of the portion of the oven which is energized. Two input controllers for each oven, also located on the front of the panel board, permit independent adjustment of the heat in the upper and lower portions of the ovens.

Once the proper heat cycle for any particular product has been determined, heating cycles can be duplicated at any time simply by resetting the controls to the same point. Thus results can be easily duplicated and quality control is assured.

Safety Features. The control system incorporates a number of safety features. As required by J. I. C. specifications, the panel board has the main interrupter and the handle of the panel board interlocked so that it is impossible to open the panel board without killing the circuits.

The system has a prepurge built in and interlocked so that the blowers will have to operate for a period of approximately three minutes to clear any hazardous vapors from the oven before it is possible for the oven to be energized. Interlocks on the control system trip off the entire load should the exhaust system fail.

Additionally, interlocks are provided to turn the equipment off should the drive mechanism conveying the belting through the oven fail. Remote push button stations give operator full control over starting and stopping of the system from various points in the area.

Maintenance. Hinged doors lo-

Totally enclosed J.I.C. control panels automatically control time and temperature cycles in infrared drying of impregnated belting. Safety features include automatic clearance of hazardous vapors from ovens before start-up, and interlock mechanism which automatically shuts off power when panel doors are opened.

cated along the full height of each oven facilitate inspection and maintenance. In addition, a ladder and catwalk around the ovens permit ready access to the equipment at any time.

Summary. The infrared drying system enables Globe Woven Belting Co. to produce a better quality product more economically than with steam drying. Important advantages of the infrared system are:

1) Operating cost is low.

2) Infrared drying offers much closer control. Processing can be controlled to a degree not possible with steam drying.

3) Infrared permits application and drying of a wide range of coatings.

4) Wider and lighter gauges of fabric can be handled because there are no disturbing air currents to cause whipping of fabric.

5) Immediate response (no heat-up time) reduces operating costs and provides further heat control.

6) Infrared radiation enables the impregnation to penetrate more deeply into the woven belting.

7) Reduced shrinkage — reject material is reduced considerably and belting widths can be controlled accurately.

8) Less heat in work area compared with steam heating.

9) A quality product is produced.

It is interesting to note that the first roll of belting processed through the system came out perfectly, a tribute to the engineering skill that went into the initial planning.

Wool mill orders tied to business outlook uncertainty

by Ruth Jackendoff
Director, Department of Economics and Statistics
The Wool Bureau, Inc.

Extract

■ IN VIEW of the hesitation in overall business activity, the textile industry should not be entirely surprised at the gradual decline in new textile orders which developed during recent months. The belief is frequently expressed that the textile industry is better prepared now than ever before to cope with a recession in textile demand because there are fewer firms, more efficient plants and equipment, and a more scientific approach to inventory control. But retailers are also exercising tighter inventory control and this is probably contributing to the current decline in textile activity. By the same token, the duration of the textile decline should be much briefer than in the past.

Available statistics of consumer clothing demand prior to the fall season suggest that the sporadic retail ordering of spring, 1961, merchandise during recent weeks is influenced more by uncertainty about the business outlook than by retail sales. Consumer clothing expenditures for seven months of 1960 were actually 4% ahead of the corresponding year-ago rate. As the consumer apparel price index rose by less than 2% between July 1959 and July 1960, unit sales must have advanced over the period. Nevertheless, at the end of July, department store stock-sales ratios were on the high side of past July ratios in most clothing and sportswear departments, except men's clothing.

January-August mill consumption of apparel wool was off 4% from a year ago, reflecting a shade more weakness in the worsted system than in the woolen system. The revival of interest in 100% wool tropical worsteds for spring, 1961, is expected to improve the worsted picture before the end of the year. On the other hand, the synthetic-wool blends may give 100% wool fabrics stiffer competition in fall-winter lines as man-made fiber producers push harder than ever to find markets for their expanding capacity.

During the first half of the year, the production of civilian wool apparel fabrics was 2% below that of a year ago, including a 9% decline in men's wear fabrics and a 3% rise in women's wear fabrics. The output of domestic mills was supplemented by close to 45 million square yards of imported wool apparel fabrics (equivalent to 29 million linear yards), representing an increase of 31% over the corresponding 1959 rate of imports. When imports are added to production, the total supply of wool apparel fabrics available to cutters during the first six months of 1960 actually exceeded that of a year ago by 2%. By August, imports of wool fabrics totaled almost 50 million square yards. Italy maintained its new leadership in the import market followed, in order, by Japan and the United Kingdom.

The production of non-apparel fabrics declined severely as the demand for transportation upholstery took a nosedive. The shift from large cars to compact models is likely to reduce not only the potential yardage of upholstery fabrics, but also the demand for quality fabrics. Blanketing continued to lose ground, but there is evidence of a resumption of retail promotional support for wool in an effort to resuscitate quality and prestige lines in this badly demoralized market.

The outlook for consumption of apparel wool over the next six months depends to a large extent on consumer confidence in the near-term business outlook. This will be expressed in the trend of retail clothing sales which influence the volume of retail orders for new stocks. Trade reports of current retail clothing business have a phlegmatic tone, but national statistics often discredit the views advanced by individual businessmen. It still remains to be seen whether or not clothing expenditures during the entire fall season will hold up to first half year rates.

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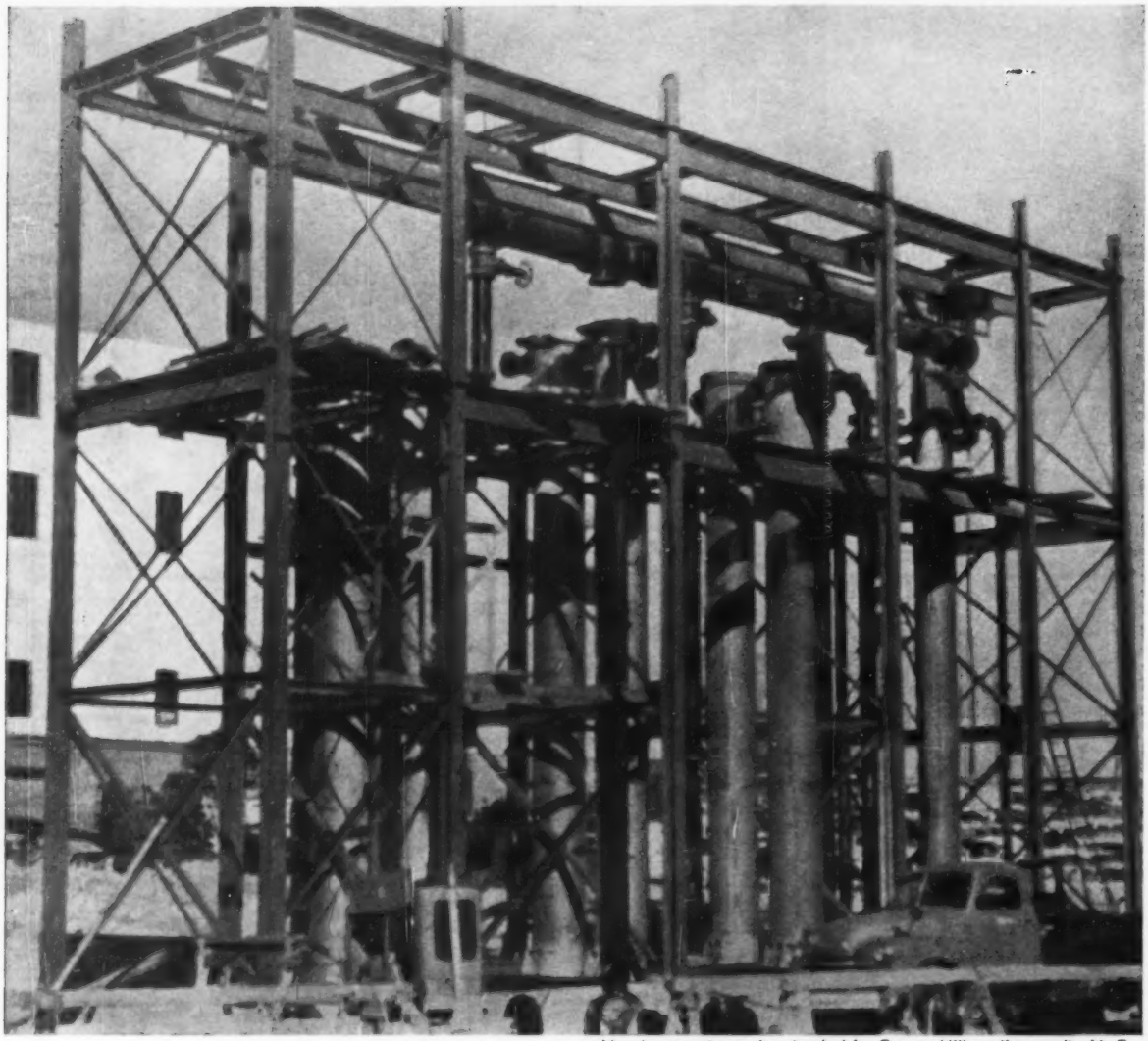

Now in operation and saving fuel for Cannon Mills at Kannapolis, N. C., are the eight P-K Heat Reclaimers shown here. Two units handle 500 gals./min. of liquor from desizing operations. Two handle 700 gals./min. of caustic waste. Four handle 1800 gals./min. from dyeing operations. Performance exceeds substantially that of conventional designs.

p-k heat reclaimers cut fuel cost for CANNON MILLS

Reclaiming 50- to 60-million Btu per hour, the eight new P-K Heat Reclaimers at Cannon Mills are rapidly paying for themselves. They raise the temperature of fresh water from 60° to as high as 130°F. with heat from waste desizing, caustic and dye liquors. Important too, total cost for the reclaiming installation is less than cost of new steam generating equipment. All of which is aside from fuel savings. • At Cannon Mills, as always, P-K Heat Reclaimers are custom fitted to the job. These are stainless steel, four-pass and six-pass. In operating efficiency, they lower considerably the usual 10°F. gap between final temperature of the fresh water heated in the reclaimers and the top temperature of the waste water. Only the unmatched experience and care of the largest manufacturer in the field makes this unusual performance possible.

A complete report on this installation is available upon request. The Patterson-Kelley Co., Inc.

Patterson Kelley

Laundry and Textile Division
2806 Wilson Street, East Stroudsburg, Pa.

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How to set twist in spun nylon carpet yarns

Extract*

■ ALL yarns to be twist-set must be twist-set in skein form. This is necessary for uniform relaxation during setting, as well as for uniform penetration of heat and moisture.

Skein Preparation. Skein weight ranges from 1 to 6 pounds. The heavier skeins require a larger reel diameter to permit uniform relaxation.

To determine the optimum skein leasing and tying methods for specific yarns or relaxation cycles, experimentation usually is required. It is necessary to find a compromise between tying too tightly, which would restrict the degree of relaxation, and tying too loosely, which would allow tangling.

Yarns should be skeined as soon as possible after twisting. Lagging on twister bobbins for varying periods of time causes variation in the length of the skein. This variation, if heat-set into the yarn, will cause texture streaks in carpets.

Relaxation. Since uniform lag times are not always possible, a method for uniformly relaxing the skeins before twist-setting is necessary. This relaxation or uniform development of the desired kink is accomplished by mechanical flexing of the skeins in wash wheels or tumble dryers.

The following procedure is suggested for friezé type yarns:

1. Tumble skeins for 3 to 5 minutes.
2. Turn skeins inside out, snatch and tumble again for 3 to 5 minutes.

Conditioning of the skeins in a constant humidity room at 95% rh, or tumbling (friezé yarns) in an atomized water or steam spray, is helpful in producing more uniform relaxation and introducing needed moisture into the yarn prior to steam twist-setting.

TWIST SETTING

The desired texture must be evident in the yarns before setting, because alteration is not practical once the yarn is set.

Extremes of either tension or compression should be as randomly applied as possible. This will assure streak-free random texture in the finished carpet.

It is important from the standpoint of subsequent uniform dyeing that all process variables be under control. These variables are temperature, yarn moisture, steam moisture, temperature of the autoclave walls, air removal and steam penetration, and the sequence and length of the vacuum-steam periods. Each of these is discussed below.

Temperature. The dyeability of nylon yarn varies with the temperature at which it is heat-set. The higher the temperature the deeper the dyeing, and the better the twist retention during carpet manufacture and texture retention in use. Therefore, the maximum temperature from batch to batch and from place to place within the batch during twist-setting should be accurately controlled.

Yarn Moisture. To assure uniform heat relaxation, it is vital that the yarn entering the autoclave contain adequate moisture. Six per cent moisture is desirable.

Conditioning of the yarn at 95% rh, tumbling in atomized water or a steam spray, and wetting out and extracting are among the methods being used to provide moisture in the yarn prior to steam-setting.

Steam Moisture. Superheated steam supplied to the twist-setting vessel can cause nonuniformity in the yarn. Desuperheating devices are available commercially, or can be constructed. Every effort should be made to provide saturated steam to the autoclave.

Temperature of Autoclave Walls. Any condition which causes drying of the yarn prior to steaming is harmful. Therefore, it is desirable that the temperature of the autoclave wall be no higher than 120 to 150 F when the yarn enters the autoclave so that non-uniform drying by radiant heat is prevented.

Localized heating in high vacuum causes localized drying. This results in non-uniform relaxation and dyeing.

Spraying the autoclave walls with water to cool them, and protecting the yarns by reflective shields are methods being used to prevent the action of radiant heat in drying the yarn prior to steaming. When spraying the walls, care should be taken to avoid damage to the vessel by shocking with a sudden temperature change.

Air Removal and Steam Penetration. It is necessary to pull the maximum vacuum as rapidly as possible, and when the vacuum is reached to admit the steam without delay. Extended pre-vacuum periods cause dangerous drying of the yarn.

To get uniform steam penetration to all portions of the load, it is necessary to remove air first with a good pre-setting vacuum. Satisfactory results have been obtained using a pre-setting vacuum of 26.5" of mercury, while at pre-setting vacuums of less than 26.5" nonuniform dyeing yarn has resulted.

Sequence of Vacuum-Steam Periods. The sequence of vacuum-steam periods used in a custom operation must be established by experimentation with the equipment to be used. Naturally, the vacuum, steam, and lag times will vary with the equipment and the load, and as a result will need to be worked out on an individual basis at each installation.

When establishing the steam-vacuum cycle for any piece of equipment, it is suggested that thermocouples be used to make certain that the temperature through the skeins, and from skein to skein, reaches a uniform maximum.

Drying. Drying after twist-setting is necessary to prevent wet winding and consequent texture streaks. A variety of tumble dryers and hot air ovens are used. Temperatures of 180 F for 30 to 60 minutes have resulted in satisfactory drying without harmful effects to the yarn. Prior to winding, the yarn should be lagged to permit normal moisture regain.

*From Bulletin N-121 entitled "Twist-setting spun carpet yarns of Du Pont nylon" published by Technical Service Section, Textile Fibers Dept., E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

New Economies in Flat-Belt Operation

Tanastic, the nylon core leather belting by Rhoads, makes no maintenance demands. Will not slip because it is stretch-free. Maintains tension, runs straight and true. Tanastic starts up without slipping, and runs at highest speeds required in mill operation.

Ask a Rhoads belt-drive engineer about Tanastic nylon core leather belting, Texalon nylon core synthetic belting, or famous Rhoads Tannate leather belting. Literature on request. Address Engineering Department, J. E. Rhoads & Sons, Wilmington 99, Delaware.

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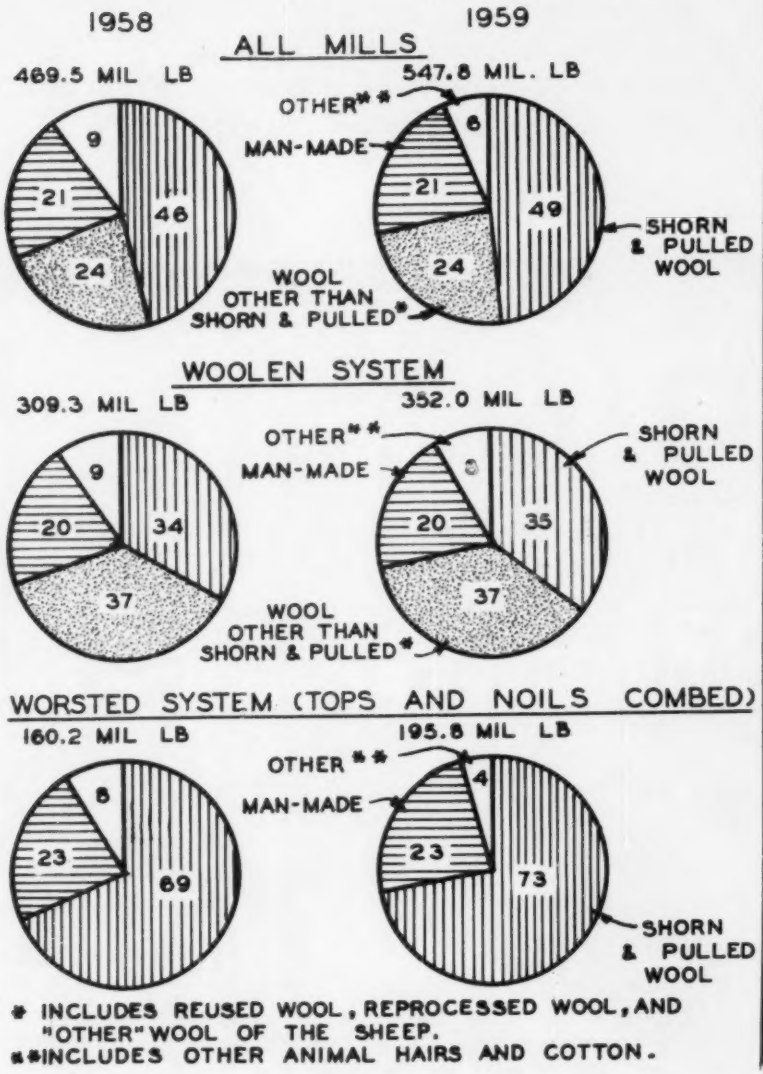
FIG. 1—FIBERS USED IN WOOL MILLS

Percentage Distribution of Total Fiber Consumption in Woolen and Worsted Mills, 1958 & 1959



* INCLUDES REUSED WOOL, REPROCESSED WOOL, AND "OTHER" WOOL OF THE SHEEP.
**INCLUDES OTHER ANIMAL HAIRS AND COTTON.

Useful wool fiber and fabric data

■ WHILE the quantity of fiber consumed in U.S. woolen and worsted mills last year was much greater than in 1958, the change in type of fiber used was only slight, as shown in the pie charts in *Fig. 1*.

Note that in 1959 the amount of shorn and pulled wool used was 3 per cent more than in 1958 and the quantity of "other" fibers was 3 per cent less. Figures for man-made fiber and wool other than shorn and pulled are the same for both years.

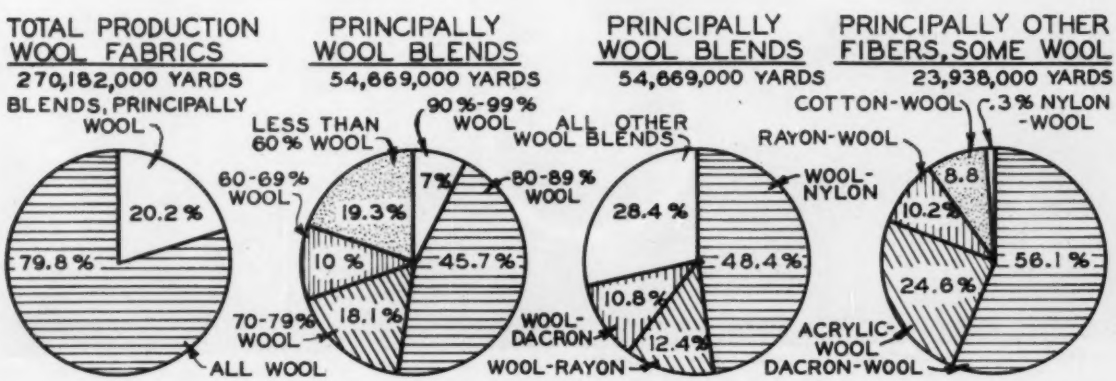
Note also that woolen system mills used more reprocessed, reused, and "other" wool than shorn and pulled wool.

Blends accounted for 20 per cent of 1958 production of broadwoven wool fabrics, as shown in *Fig. 2*. Observe that blends of wool with nylon accounted for almost half of the output of wool blends.

Blends of other fibers, with wool as the less important fiber, were less than half as important as wool blends. Dacron-wool blends accounted for over half of these.

SOURCE: "Graphic Review of the United States Wool Situation, Early 1960," by Ruth Jackendoff, director of the department of economics and statistics, The Wool Bureau, Inc.

FIG. 2—BLENDS IN 1958 OUTPUT OF BROADWOVEN WOOL FABRIC



It's blue-white, it's beautiful and it's engaged to some of the most exciting new bridal fabrics in town. It will also have a happy future in swimwear, knits, foundation garments and other feminine fashions. Once again, Eastman fills a long-felt need...with the first blue-white solution-dyed acetate available anywhere.

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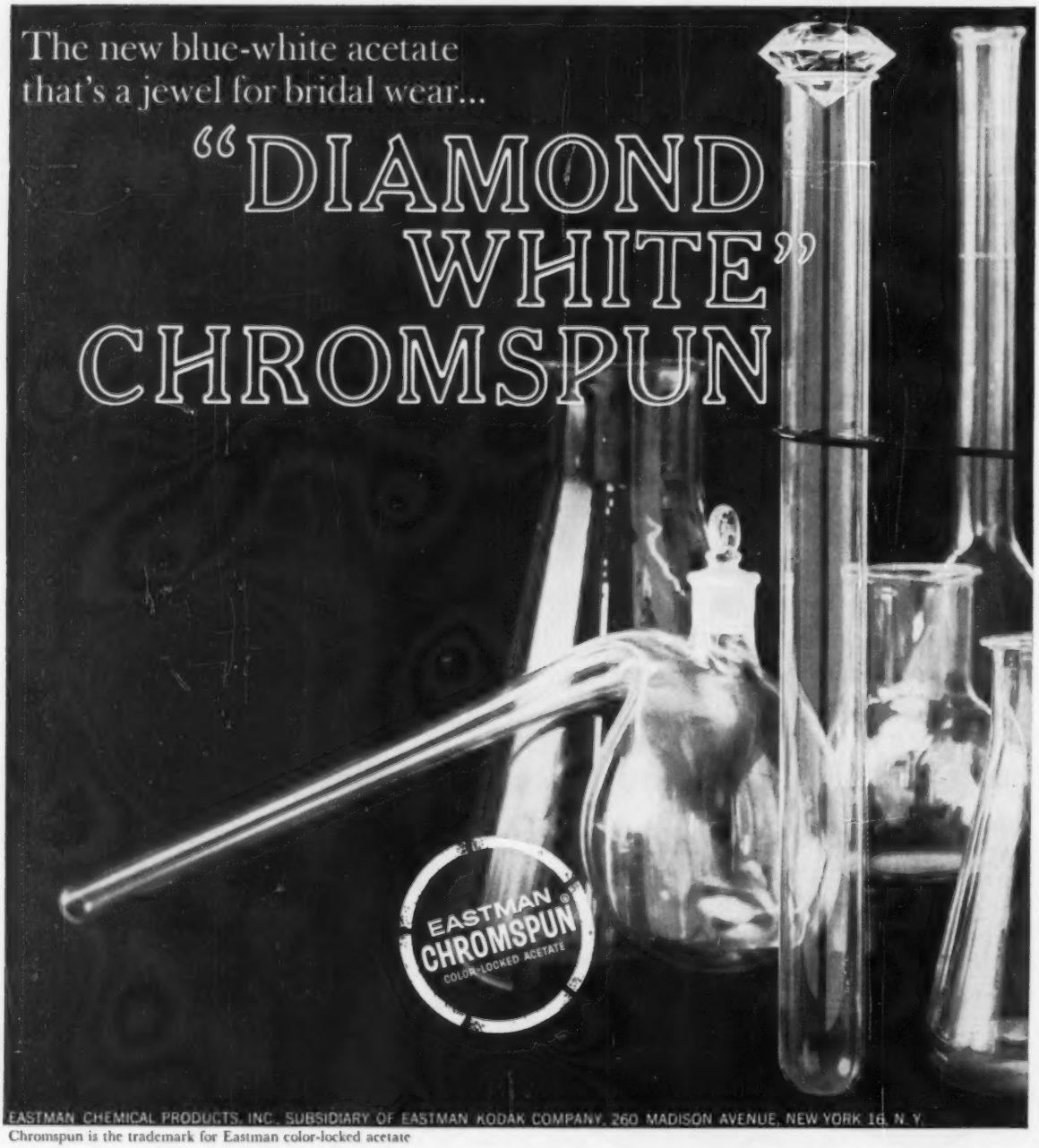
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The finished and unfinished areas above emphasize the effectiveness of the urethane floor finish.

FLOOR UPKEEP COSTS DROP

at Chatham Mfg. Co. as the 9 acres of wood floors are refinished with a product which mill tests indicate will last for 1½ years in heavily traveled areas

Staff prepared

Exclusive

URETHANE* has made floor finishing worthwhile, according to Claude B. Hart, chief engineer of Chatham Mfg. Co., Elkin, N. C. "Before urethane, the results obtained in floor finishing were not worth the cost," he says.

Tests began some time ago when Chatham finished a main traffic alley by devoting 10-foot stretches to finishes of different types. After three or four days the differences began to show, and after two months all but the urethane showed definite signs of breaking down—they dulled while the urethane kept its new look. That did it.

Chatham began applying the finish in earnest in 1959, starting in a card room where the oil soaked and grimy floor defied efforts to keep it bright. The floor also absorbed a great amount of light intended for the operatives.

The crew assigned to the finishing task made a trial sanding run on the floor and almost immediately stopped the sander to change the sandpaper.

This happened frequently on the grimy floor, so management purchased a scrubbing machine to be used ahead of the sanders. The machine cleaned the wood so well that it paid for itself in the saving in paper alone.

With the wood dressed to the desired smoothness, the crew cleaned it of all dust and brushed the urethane on with "fur-covered" applicators 24" long and 2" wide.

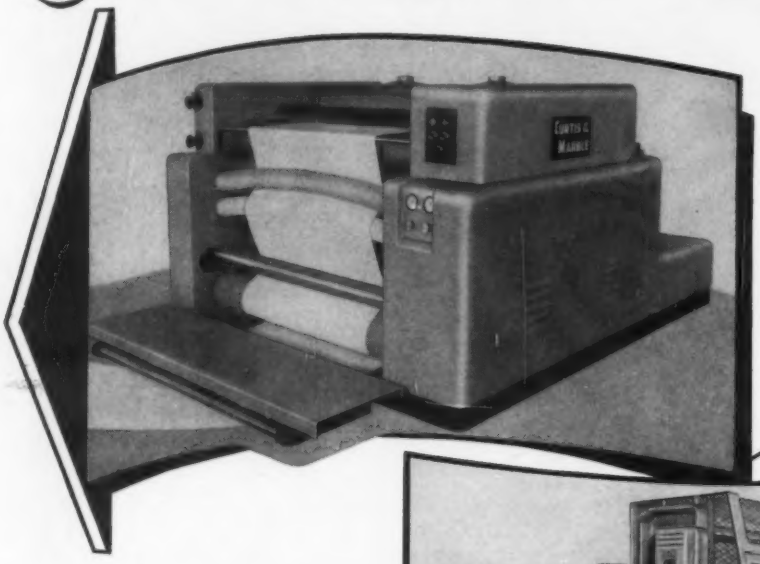
It requires more care in brushing on than do many finishes, but it dries quickly in the high humidities of a textile plant, quicker than it will in drier conditions.

That first coat was allowed to dry eight hours. At that point it presented a hard, dense coating relatively free of lint and which had adhered easily over small spots of oily wood. It was ready for a second coat.

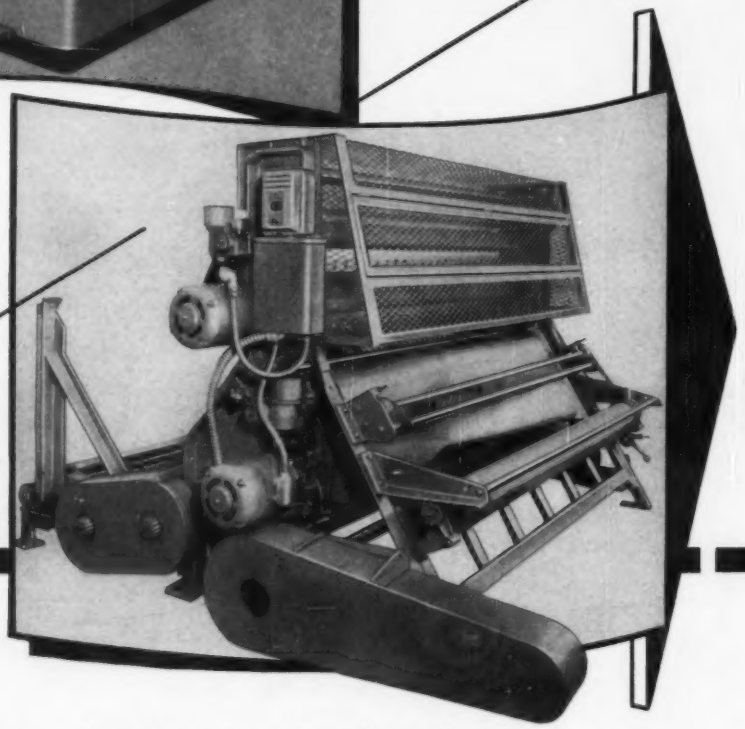
Again the sanding machines began lapping the area, this time with their motors practically idling as they whipped fine sandpaper

* Urethane isocyanate (oil free) textile floor finish, a product of the Finishes Division of E. I. du Pont de Nemours & Co., Inc., which is now being marketed under the tradename of "Imron."

One way - or the other...



there's nothing better made than . . . .



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across the dry urethane in search of a "whisker" or a ripple or other high spot. The paper scored the first coat, too, to give it "tooth" for the second coat to hold. This action left the first coat smooth to the touch, a suitable base for the coat to follow.

The dust from the fine sandpaper was picked up and a second coat applied and allowed to dry. This coat looked better than the first one, thanks to the good foundation.

The finish was hard enough to stand up under a shoe sole without scuffing, was more lustrous, clearer, and freer from lint than anything that had ever been used on the plant floors. It could be cleaned with soap and water and was indifferent to oil. It had bonded well, and it gave off no odor.

At Chatham there are something like 390,000 sq ft (almost nine acres) of wooden floors to be kept finished. And to date the job is moving well on toward the end (by August 290,000 sq ft had been completed) with none of the treated areas having required "retouching."

When it is finished, the maple flooring (this wood is present in all areas not utilizing concrete floors) will be under a urethane finish without having cost Chatham significantly more than any other similar finish.

The compound dries within three hours under high humidities, but takes up to six hours in the drier atmospheres.

Chatham officials point out that the materials represent only about five per cent of the over-all cost of finishing floors.

The compound is not restricted to floors. The tables upon which blankets are folded at Chatham require smooth tops that must stay smooth under the ceaseless abrasion of countless blankets being moved across them. An oil-free urethane has stood up so well under those conditions that it actually has saved Chatham the expense of re-covering some of the tables.

How long will the finish last? Chatham expects a life of 1½ years in areas of heavy traffic; indefinite life in the lighter-traffic areas.

Heavily traveled areas show the finish in its best light—expected life here is 1½ years. Water-stained wood below is adequately covered, protected against future water damage.

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Experienced mill men know that Victor's uniformity, year after year, can be relied upon for better penetration, stronger warps, greater smoothness.

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THE KEEVER STARCH COMPANY

GENERAL OFFICES COLUMBUS 15, OHIO

HOW OTHERS MANAGE

Ways to keep the pirn boards clean and ready for use

THE EDITORS:

Pirn boards are liable to become dirty with atmospheric dust, and tail ends of yarn frequently accumulate at the base of the pegs. If pirns are placed on a dirty pirn board, the starting tails, the pirn bases, and parts of the inner barrel will be soiled. When a soiled empty pirn is pushed on the pirning spindle it inevitably soils succeeding pirns until it is wiped clean.

When the pirn trays and pegs are of mild steel, these are difficult to keep clean if the steel has rusted, because the yarn fibers and dust particles cling to the rough rusty surface of the tray. This may be remedied by a coat of paint.

Plywood pirn trays with painted steel pegs avoid the rust trouble, but dust and tail ends accumulate on the boards unless there is a regular and systematic cleaning of the boards. This may be done by compressed air, suction, or by cleaning the tray with a suitable brush, preferably in a store room.

The modern aluminum lightweight pirn board is rustless and easy to keep clean because the surfaces have no sharp corners and have a smooth finish.

Another pirn board fault concerns the bottom of the board. If a board is placed on a dirty floor, a dirty shelf, or on an oily pirn board bracket, the bottom of the pirn board will be soiled. Pirn boards are generally stacked on top of one another. And if the boards have no self-stacking side supports, the soiled base of one pirn board will soil the pirn tips of the board beneath it on the stack.

Soiled pirn tips will soil a great deal of yarn and fabric in addition to soiling the weaver's/pirner's hands when he or she is reloading the shuttle/spindle. This trouble can be avoided by using transportable tray cabinets with up to five shelves, which can accommodate ten pirn trays with 100 pirns each, or 1,000 pirns per cabinet. These cabinets can be loaded at the pirning machines and taken to the weaver's alleys where the weavers can use them as required, and return empty

Contest closes December 15—get your entries in now!

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance, and the $100 award will be made to the winner as soon as all entries are judged.

The contest rules are simple:

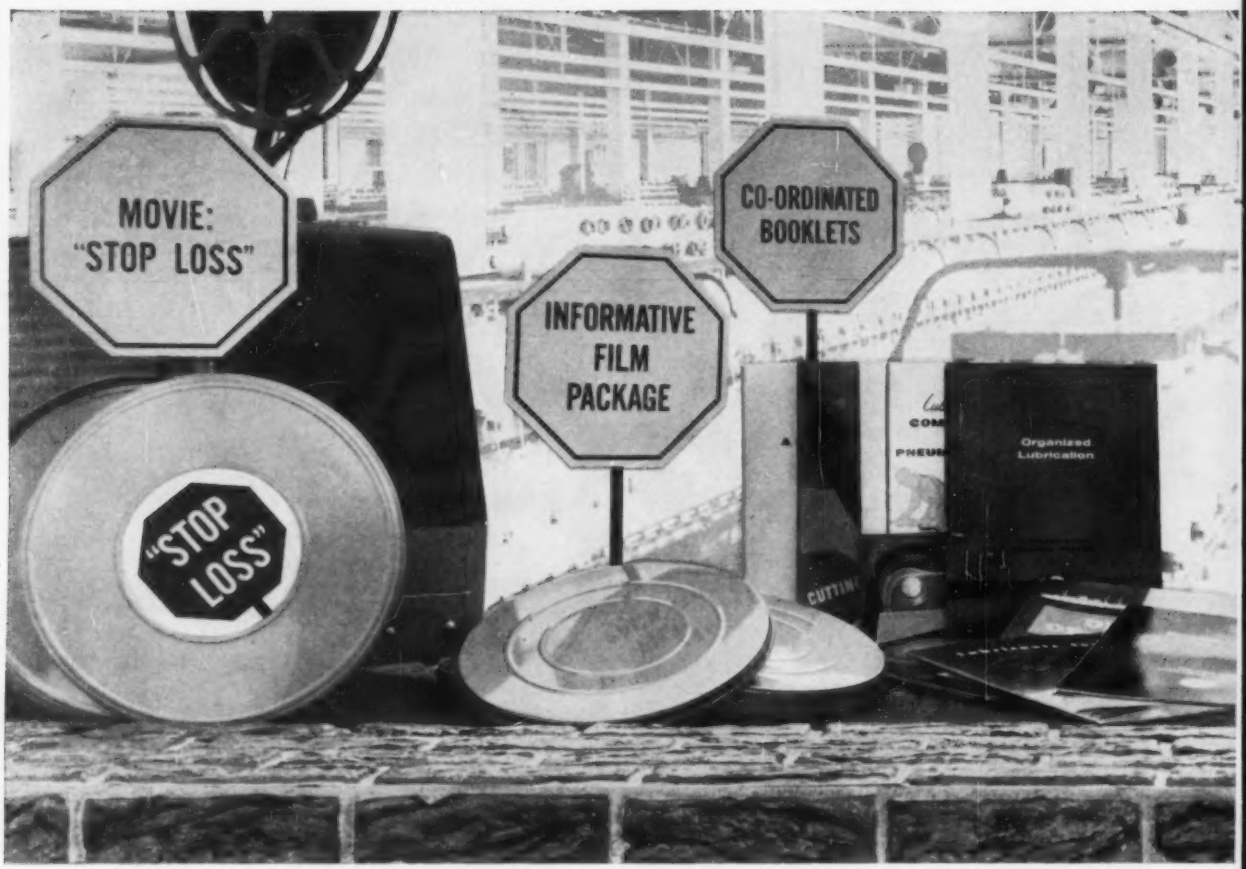
► All contributions must be postmarked not later than midnight, December 15, 1960.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance—no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 8, Georgia.



MOVIE: "STOP LOSS WITH ORGANIZED LUBRICATION," a new 20-minute color-and-sound film that dramatizes the opportunities for cost control through Organized Lubrication.

INFORMATIVE FILM PACKAGE for mill departments consists of movies on greases, hydraulic oils, cutting oils, etc., designed to help those involved with their selection and application.

HERE ARE THE TOOLS THAT CAN HELP YOU

INCREASE YOUR NET PROFITS

Texaco's new "Stop Loss" Program is designed to cut maintenance costs by modernizing lubrication practices. If yours is an average mill, the results can add 4 per cent to your net profit.

Even if your mill is a highly efficient operation, it is *still* virtually certain that there is an opportunity for cost control that you are overlooking—either partially or completely. It involves your lubrication practices.

Here's the reasoning: Most equipment failures can be traced, either directly or indirectly, to improper lubrication practices. Organized Lubrication could have prevented the failure—and the resultant savings would have gone directly into profits.

The 4 per cent figure is not hypothetical. It's what the Small Business Administration has found the average U. S. industrial operation can tack on to profits by *organizing its lubrication.*

Texaco's Program is designed to help you. Texaco has developed a "Stop Loss" Program specifically designed to help you cut maintenance costs via better lubrication practices. It will help you stretch equipment life, minimize downtime, reduce lube inventory, even cut purchasing costs. It costs virtually nothing to install, yet will start turning maintenance savings into profits almost immediately.

CO-ORDINATED BOOKLETS covering almost every facet of lubrication can be used as guides in specific areas.

TEXACO LUBRICATION CONTROL SYSTEM takes the guesswork out of all lubrication scheduling—makes sure that the right lubricant goes in the right place at the right time.

BY AS MUCH AS 4 PER CENT!

Can your mill pass this test?

Q. Is there anyone in your mill with direct responsibility for all lubrication? Yes ☐ No ☐

Q. Is there any mill-wide system for making sure that equipment gets lubricated on schedule? Yes ☐ No ☐

Q. Are your oilers qualified men with a knowledge of the mechanisms to be lubricated? Yes ☐ No ☐

Q. Have you made a lubrication study to determine if the right lubricants are being used at the proper frequencies? Yes ☐ No ☐

If the answer is "no" to any of the above questions, it's virtually certain that a Texaco "Stop Loss" Program can improve your profit picture.

See for yourself how "Stop Loss" works! Texaco has just released a new color-and-sound movie to dramatize the benefits of good lubrication practices. It's called "Stop Loss With Organized Lubrication" and we think it would be profitable for you to see it. For an early showing in your mill, mail the coupon today! Texaco Inc., 135 East 42nd Street, New York 17, New York.

MAKE YOUR RESERVATION TODAY!

TEXACO INC., Dept. TI-31
135 East 42nd Street
New York 17, N. Y.

I would like to see your new movie "Stop Loss With Organized Lubrication." Please call to arrange a showing.

Name_____ Title_____

Firm_____

Address_____

City_____ Zone____ State_____

TEXACO

WHITIN
gives the magic
"Touch of Quality"
to your
CARPET YARNS

Model M Wool Card

Flex-Spin Wool Spinning

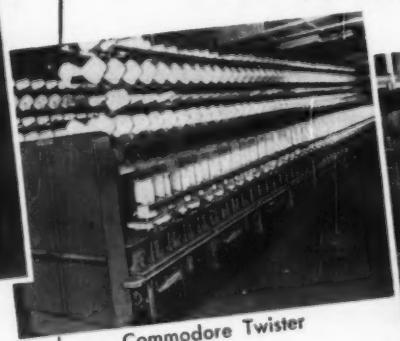
In this tough, competitive world, there are no magic wands to impart the "touch of quality" to your carpet yarns. Only proper planning — and proper processing — can do it.

The proper planning is yours — but the "proper processing" is where Whitin steps into the picture.

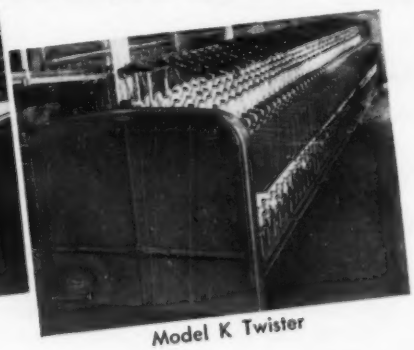
From Carding through Twisting on either natural or synthetic fibers, there are ultra-modern Whitin machines to handle each process better, faster and more economically than ever—to produce carpet yarns you can be proud of—carpet yarns that truly have the "touch of quality".

For complete information ask your Whitin representative, or write direct to us.

Monarch Spinning



Commodore Twister



Model K Twister

WHITIN MACHINE WORKS

WHITINSVILLE • MASSACHUSETTS

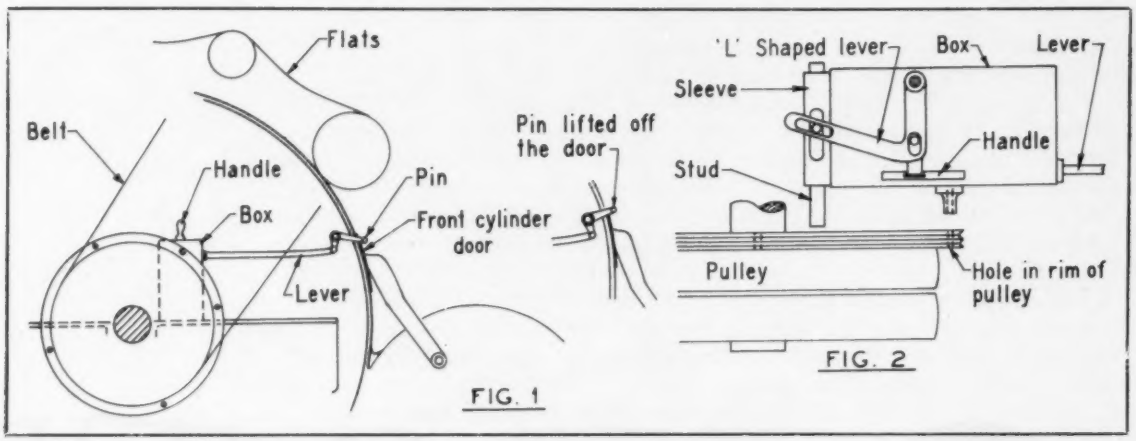
CHARLOTTE, N. C. • GREENSBORO, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

pirn boards to the cabinet for protection.

As may be noted from the foregoing, there is little point in paying careful attention to pirns and pirn-boards if handling, which accounts for so much bobbin soilage, is neglected. Operators should be specially instructed in hand cleanliness. Therefore, good housekeeping methods should be maintained as it is conducive to the maintenance of clean working conditions.

CONTRIBUTOR No. 1261

Keeps cylinder doors closed on running cards



THE EDITORS:

We have some old H&B cards for which we provided locking arrangements for the front cylinder doors as shown in Fig. 1. When the handle is pushed towards the licker-in, the pin comes over the cylinder door. To release the locking handle, a piece of thin rod must be introduced through one of the holes provided on the rim of the pulley (see Fig. 2). A spring catch inside the box releases the handle when pressure is applied with the rod. This arrangement was not completely fool-proof since the cards could run with the locking arrangement always in the released position.

To make the arrangement completely tamper-proof we added an 'L' shaped lever, a sleeve, and a stud as shown in the plan view (Fig. 2). When the handle is in the locking position, the stud is slid away from the pulley. But when the handle is released (which is possible only when the cylinder absolutely stops revolving) the stud gets into a recess made in the pulley. With this arrangement it is not possible to start the card unless the locking mechanism is again put into operation, when the stud slides off the recess made in the rim of the pulley.

CONTRIBUTOR No. 1265
(India)

The dyehouse can make good use of polyethylene

THE EDITORS:

The availability of a chemically resistant, tough, low-price, and transparent sheet material such as polythene enables many operations in the dyehouse or print works to be simplified. Instead of weighing individual dyestuff powders or pastes into buckets or other containers, it is very easy to use small polythene bags with a separate bag for each ingredient.

This often enables the weighing to be done more accurately and also is a sure safeguard against contamination by flying particles of dyestuff. It also frequently means that the drug room storekeeper can issue all the ingredients for one process at the same time with the machine operator adding them separately at the correct stage.

Polythene sheets make an excellent cover for preventing drying out of pastes. If any ingredients tend to absorb moisture from the air, polythene film pressed tightly over the product under the lid will considerably reduce this. The formation of skin on the surface of print pastes and gums which may have to be stored for several days is a serious source of wastage.

If a thin disk of polythene is placed on top of the paste, no evaporation will take place. The film is removed by picking up the center and pulling through the other hand so that most of the paste sticking to the polythene

CHAN

CHANGE! It's the pattern, the pulse of the textile industry. It produces new, different, salable, successful ideas and products... improves service, styling, ease of care for consumers... improves profit opportunities for you.

By originating new and improved fiber products and processes, each designed for a specific area of the textile business, we serve our customers, build their business and our own. To carry on this work, the Du Pont Textile Fibers Department operates seven separate research and development establishments. At any one time, as many as 50 fiber or process improvements may be under evaluation.

Here's a rundown of the new products and processes we have offered the industry in the past year. Look through them for the ones that affect **your** business. You can look to Du Pont to keep providing many more profit-making ideas.

"DACRON"* POLYESTER FIBER: **Rotoset yarn**—Special filament yarn. Improves mill processability, permits reduction in twist levels. **Type 64 color-sealed black**—Designed for suitings—black staple and tow with broad style possibilities. **Type 62**—Filament yarn with improved hand and dyeability. Makes possible new styles and prints for apparel. **Type 35**—Improved fiber for cellulosic blends permitting broader range of fabric type. **TRL-12**—New aqueous system for improved adhesion to rubber and neoprene.

"ORLON"* ACRYLIC FIBER: **Type 72**—Staple for blending with cotton. Extra-comfortable, with durable whiteness and brightness for skin-contact apparel. **Fiber Sealed**—Fiber Sealed jersey knits with shape locked in—firmness jersey has never known—resists crushing, sagging—springs back to beauty. Fiber Sealed blankets with resistance to matting and shedding.

GE!

"ORLON SAYELLE"* ACRYLIC FIBER: **Type 24**—For full-fashioned sweaters and fine-gauge jersey knits—supplementing bulky sweaters of "Orlon Sayelle" Type 21.

DU PONT NYLON: **"Antron"* nylon**—New trilobal multifilament yarn with luxurious hand, rich lustre, durability. For apparel. **"Antron" 24 nylon**—Rich upholstery nylon. New beauty, styling, texture, soft highlights. **Type 288 nylon**—Improved texturing performance, bulk, dye uniformity. For the texturing industry. **Type 91 nylon**—Whiter nylon with superior texturing performance for circular knit foundations. **Tricot satinette**—Outstanding aesthetics, appearance and hand for luxurious lingerie. **"Taslan"* textured nylon yarn** used by manufacturers to produce extra-strong, eminently sewable thread for wash-and-wear and home sewing.

"ACELE"* ACETATE: **Cycloset**—Yarn development for tricot knitters. Superior running performance. For deniers from 40 through 100, either on tubes for warping or tricot beams.

DU PONT RAYON: **"Super Cordura"* Type 272-T**—New type of thread for bag closures. Lower cost, high performance, strength, holding power. No operational adjustments. For burlap, textile or multi-wall bags.

"LYCRA"* SPANDEX FIBER: The only multifilament spandex fiber. Makes possible uniquely lightweight elastic apparel—foundation garments, swim wear, sock tops, surgical hosiery, etc.

BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

DU PONT

REG. U.S. PAT. OFF.

*DU PONT'S TRADEMARKS

Enjoy "The Du Pont Show With June Allyson", Thursday nights on CBS-TV.

This STROBOTAC is the most significant advance in stroboscopic design in over twenty years. Many important new features have been incorporated — features that have been thoroughly field tested and evaluated by textile experts.

U. S. Patent Numbers: 2,478,901; 2,478,907; and 2,492,142 Patent Pending; Patent Applied For.

New White Light — 100 times brighter than previous model, lets you see details of spinning and roving frames, looms, pin-drafters, carding machines, and other textile equipment while operating at full speed.

Short Duration Flash — complements the brighter light for checks on high-speed machine parts — eliminates blur when observing rapidly moving objects.

Easier to Use — one simplified range switch on top of instrument controls rate of flash.

Pivoting Lamp — just aim the lamp while holding the Strobotac in most convenient position for reading the calibrated RPM scale.

Light-Weight — Small Size — weighs only 7½ pounds; case dimensions are 6¼ x 5½ x 8¾ inches.

Extended Range — now direct reading on all ranges, from 110 to 25,000 RPM; useful at speeds up to 250,000 RPM.

1% Accuracy — permanently assured by panel neon-bulb calibrator.

Long-Throw Beam — new Strobotron tube specifically developed for this instrument produces concentrated beam of high-intensity light; may be aimed at a row of spindles from the aisle as operator walks by, instead of each one individually, to greatly speed spinning frame checks.

Write For Complete Information

GENERAL RADIO COMPANY
WEST CONCORD, MASSACHUSETTS

NEW YORK, WOrth 4-2722 NEW JERSEY, Ridgefield, WHitney 3-3140	CHICAGO Oak Park Village 8-9400	PHILADELPHIA Abington HAncock 4-7419	WASHINGTON, D.C. Silver Spring JUniper 5-1088	SAN FRANCISCO Los Altos WHitecliff 8-8233	LOS ANGELES Los Angeles HOllywood 9-6201	IN CANADA Toronto CHerry 6-2171

is squeezed back into the container without the operative soiling his hands.

Large sheets are invaluable for covering all types of batches of work which have to be left damp for any length of time. Drying out on the selvages of rolls of cloth is prevented, while batches of dyed yarn in hank or cheese form will remain uniformly wet and free from the danger of soiling if they are covered with film.

Because the film is transparent it is easy to see what is underneath. If a mixed batch of piece goods has to be moved by truck, contamination of one shade by another by contact or dripping can be avoided by covering each batch separately with a layer of polythene film.

Storage of samples in polythene bags enables preliminary examinations to be done without handling the sample and the labels can always be kept inside the bag, which again prevents soiling and loss.

CONTRIBUTOR No. 1268

Weekly depreciation schedule saves money

FIGURE 1
Depreciation Schedule of Machinery & Equipment
(*Fiscal Year Ended Sept.* 26, 1959)

Item No.	Description	Date acquired	Cost	(A) Reserve for depre. 9-27-58	Remaining balance	Rate (%)	Per year	Weekly expense	(B) Depre. 9-26-59	(C) Reserve for depre. 9-26-59
1	Jacquard heads and position machine with heddles and freight on above	9-28-57	25,278.43	4,087.38	21,191.05	6-2/3	1,685.23	32.41	(52 wks) 1,685.23	5,772.61
2	One 138-spindle auto. Schweiter winder w/one loader @ 60.00 - spdle (used)	11-5-58	8,280.00	0	8,280.00	10	828.00	15.92	(47 wks) 748.24	748.24
3	One 124-spindle Abbott automatic model 66 knitting cone winder (new)	2-26-59	13,694.25	0	13,694.25	5	684.71	13.17	(33 wks) 434.61	434.61

Remarks: (A)+(B)=(C)

THE EDITORS:

The average mill can report larger depreciation expense on machinery and equipment schedules by computing depreciation expense on a weekly basis and thereby benefit profitwise.

Fig. 1 indicates the proper way of recording depreciation expense based on weekly computation, which is the most accurate method devised to arrive at depreciation expense for mills operating and reporting on fiscal year basis, especially those mills producing financial statements every fourth week or thirteen periods in the year.

Since depreciation expense for mills usually constitutes the fourth or fifth largest expense item on the Income, Profit & Loss Statement, it is essential that the longest period possible be utilized in computing depreciation on items purchased within the fiscal year as illustrated in Items 2 and 3 in Fig. 1. On a monthly reporting basis depreciation expense would begin on December 1 (Item 2) and March 1 (Item 3).

In one group of mills, a net increase of $1,500.00 per year resulted in computing on the basis of weekly expense, as compared with computing by the fraction of the year by months from date of purchase. This method as above outlined should also be applied in preparing schedules of mill buildings, autos and trucks, and office equipment.

CONTRIBUTOR No. 1207

Staples hold edges of paper pattern chains

THE EDITORS:

My duties as assistant designer have led me to work out a system of gluing our paper patterns that proves most reliable. In addition to using a glue that does not soften in the weave room humidity, and which holds the very dense, slick paper against the dobby needle action and normal abuse, I staple the patterns at the edges. This seems to head off a lot of grief in the form of pattern failure at that point.

The punch we use with our paper chains is fitted with a pasting plate that allows a bar to be tightened against the glue joint to supply pressure while the glue sets. I apply the plain paper staple as I remove the glued pattern from the bar clamp.

At our home office our chief designer works with our sales department or with our customers in preparing the new designs. These are sent to our weaving plants complete with all information needed to reproduce the pattern.

We work with very small samples, using warp lengths averaging

Harshaw Diversified Products for the textile industry

ORGANIC PIGMENTS

For cotton printing and dyeing

DYESTUFFS

Disperse • Alizarine • Chrome • Acid

SHARPRINT CARRIER

Trademark

For maximum results on polyester fibers, many printers find the addition of Harshaw Sharprint Carrier to their disperse printing pastes solves the difficult problem of low color yield and lack of sharpness.

NF AND TECHNICAL

Tannic acid • Pyrogallic acid
Gallic acid • Benzoquinone

For more information about the items listed above write to:

ZINSSER DIVISION
The Harshaw Chemical Company
Hastings-On-Hudson 6, N.Y.

ZINC FLUOBORATE 40%

Zinc Fluoborate finds use as a curing agent for "wash and wear" finishes on textiles. Advantages claimed for Zinc Fluoborate as a curing agent include: (1) short curing time—one to two minutes at the curing temperatures required; (2) high crease resistance; and (3) low chlorine retention. Users also report that there is less tendency for polymerization to occur in the bath when Zinc Fluoborate is used.

ZINC NITRATE FLAKE

Harshaw Zinc Nitrate Flake is especially suited for polymerizing resins currently being used for wrinkle-free and wash-and-wear fabrics.

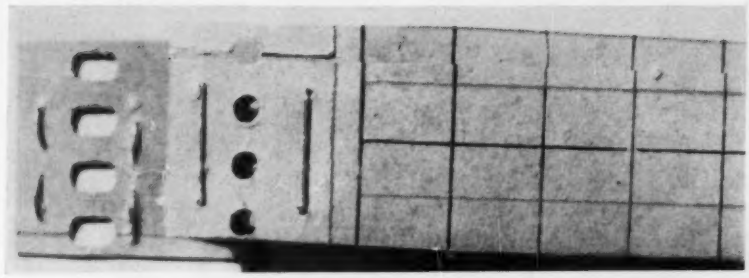
TYPICAL AVERAGE ANALYSIS

Zn	25.20%
FE	0.001%
Pb	0.005%
H_2O Insoluble	.008%
pH of 5% solution	5.1%

For more information about the items listed above write to:

THE HARSHAW CHEMICAL COMPANY
1945 East 97th Street
Cleveland 6, Ohio

HARSHAW

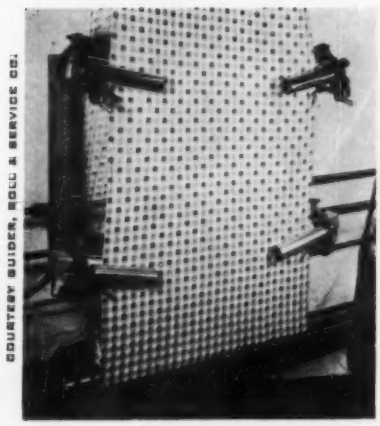


70″ and widths from 8″ to 22″. Our sample weavers then get the samples off the loom and ready for the finishing department. We finish the samples and retain a swatch as we send them to our customers for approval. Thus we are ready to proceed at full speed whenever we get the order. I should add that we often weave several samples side by side from the same warp.

In addition to keeping tabs on all the above, I prepare all new pattern sheets and perforate all the paper chains. In so doing I know quite well who is at fault when a design is misinterpreted and shows up wrong in the weave.

CONTRIBUTOR No. 1263

Pairs of guiding heads keep straight selvage



COURTESY GUIDER, ROLL & SERVICE CO.

The illustration shows how one set of guider heads may be mounted above another but with both moving on the same stand carriage. The arrangement is used for preguiding—the top pair of guiders is cloth-operated, but a pair of air guiders can just as well be used there. The lower pair are electric with an extremely light touch.

The positioning and the angles at which the guiders are set permit building on straight selvages regardless of cloth width variations.

Cockled yarn may be from bad weighting

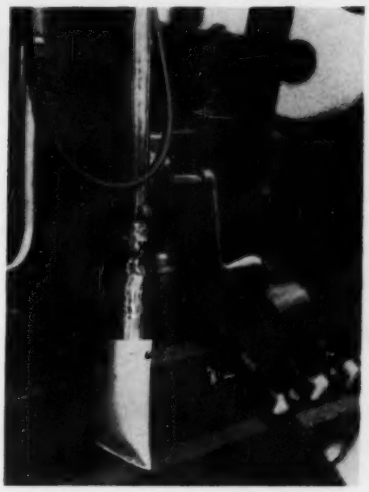
THE EDITORS:

Many times a plant seems troubled with cockled yarn only to find the trouble is not from the roll settings being too close. Management, sometimes in looking toward replacing their spinning equipment, is tempted to let maintenance requirements drop off on the equipment scheduled for scrap. This means that roll necks and nebs and stirrups and saddles may deterioriate badly and not let the weights apply proper force to the rolls. Thus undrafted stock getting through may cause undue concern over roll setting, etc., instead of frame maintenance.

CONTRIBUTOR No. 1271

Extension aids spooler

A simple extension tube on B-C automatic spoolers helps the traveling unit blower do a better job of cleaning at Panola Mill. An aluminum extension with the end cut on a bias and constricted to a narrow air outlet increases the air velocity and places the outlet closer to parts to be cleaned as the traveling unit moves around. The extension is fastened on with set screws, as shown in the accompanying photo.



Store small engines with care

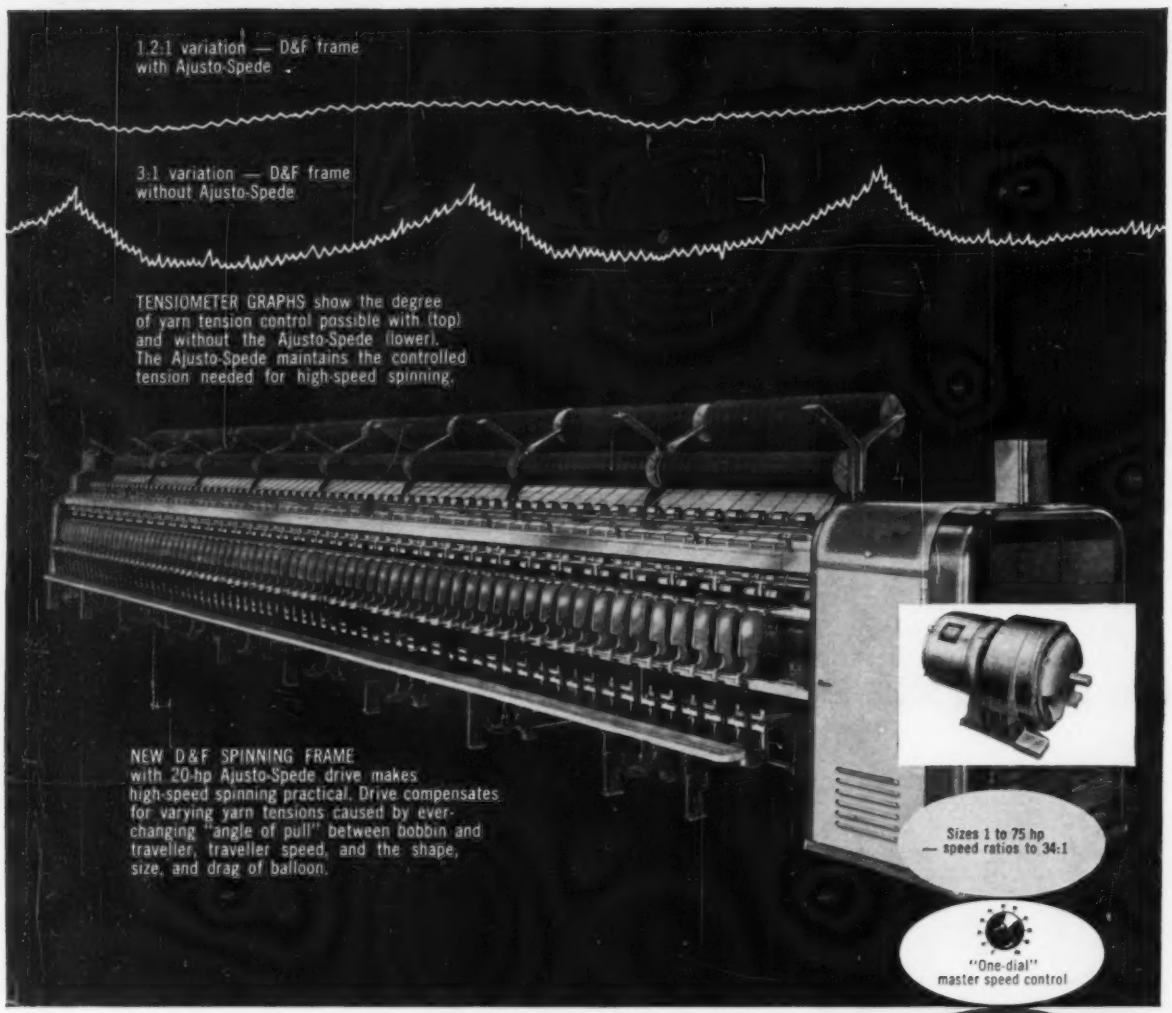
THE EDITORS:

Now is a good time to drain the gasoline from the mowing machines that have been pushed indoors for the winter. If the gasoline is left to evaporate, it leaves a gummy deposit that can easily stop up fuel lines and carburetor jets.

Also, remove the spark plug and pour a couple of ounces of motor oil into the cylinder. These are good practices that apply to all small engines being stored for extended periods.

Be doubly careful with the air filters on engines operating in very dusty atmospheres. Keep them clean for engine performance; keep them in use for engine life. It is possible to ruin a good engine within a few hours by letting it inhale as much dust as comes near it. Gasoline engines powering concrete mixers are often damaged this way.

CONTRIBUTOR No. 1270


1.2:1 variation — D&F frame with Ajusto-Spede
3:1 variation — D&F frame without Ajusto-Spede
TENSIOMETER GRAPHS show the degree of yarn tension control possible with (top) and without the Ajusto-Spede (lower). The Ajusto-Spede maintains the controlled tension needed for high-speed spinning.
NEW D&F SPINNING FRAME with 20-hp Ajusto-Spede drive makes high-speed spinning practical. Drive compensates for varying yarn tensions caused by ever-changing "angle of pull" between bobbin and traveller, traveller speed, and the shape, size, and drag of balloon.
Sizes 1 to 75 hp — speed ratios to 34:1
"One-dial" master speed control

Keeps yarn tension constant... ups output at least 20%!

Louis Allis Ajusto-Spede® drive on Davis & Furber spinning frame minimizes "ends down"...cuts costs...improves quality of yarn!

The smooth, precise control of yarn tension by the electronically-controlled Louis Allis Ajusto-Spede drive permits high-speed spinning of wool yarn. The big gain in production achieved by the new Davis & Furber spinning frame proves it!

In-the-mill production records show that uniform yarn tension brings the following benefits:

1. More yards and pounds of yarn per spindle hour.
2. More uniform yarn density and build of bobbin.
3. Fewer "ends down" and less downtime.
4. Lower per-pound production cost.
5. Production increases of 20% and more!

The Ajusto-Spede can be used as a standard adjustable-speed drive — or it can be used to cycle the speed of the frame to keep yarn tension constant. It enables you to select optimum speeds for spinning any grade of wool. Fewer "ends down" allows more free time for the operator to tend additional frames. The operator can easily adjust the controls to provide the optimum speed for the particular grade of wool, and the Ajusto-Spede *responds smoothly and automatically!*

Our drive specialists can help you increase production — to improve the quality of your spinning, as well as all other textile operations. Call your nearby Louis Allis District Office for application help — or write The Louis Allis Co., 468 E. Stewart St., Milwaukee 1, Wisconsin.

LOUIS ALLIS

AS-106

MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE-SPEED DRIVES

Franklin-Dyed Yarns

SERVANTS OF FASHION LEADERS

Franklin Dyed Yarns – cotton, worsted, spun and hi-bulk synthetics – are found in leading fashion fabrics for the following reasons:–

1. With the largest package dyeing capacity in the world and 4 plants, Franklin is a highly dependable source of supply.
2. The Franklin Compressible Spring assures uniform density of packages and hence uniform shades.
3. Franklin's unequalled laboratory facilities and half a century of experience assure strict quality control and the know-how to cope with difficult dyeing problems.

Get in touch with our nearest plant or office and let us quote on your yarn dyeing requirements.

Franklin Process
COMPANY

Largest Package Dyers in the World

A DIVISION OF INDIAN HEAD MILLS, INC.

Dyers of natural and synthetic yarns on Franklin compressible spring exclusively.

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CHATTANOOGA • FINGERVILLE, S. C.
New York Office . . . . . 111 West 40th Street
Providence Office . . 611 Turks Head Building

450-9

Speaking of Wear

Hosiery Buyer: "My customers expect minimum pop-runs from damaged filaments."

Hosiery Manufacturer: "I want to eliminate menders."

You'll both be happy with stockings dyed and finished on the *Turbo Dye Boarder.*

With the Turbo Dye Boarder, handling of hosiery is reduced to a minimum. By combining preboarding, dyeing, postboarding, and drying in one machine, the Turbo Dye Boarder provides a short-cut from the greige goods examiner to the pairer. Mending is substantially reduced.

Pressure dyeing in the Turbo Dye Boarder accomplishes deep penetration of dyeing and finishing materials into the fiber, bringing about rich color values, more life and elasticity, better light and wash fastness, better snag resistance, and longer wear. Production capacity is 140 dozen pairs per shift with one operator. Bulletin on request.

TURBO

TURBO MACHINE COMPANY, LANSDALE, PA.

Licensed Builder for Spain: Argelich, Termes Y C. A. Tarrasa, Spain

KNITTING SECTION

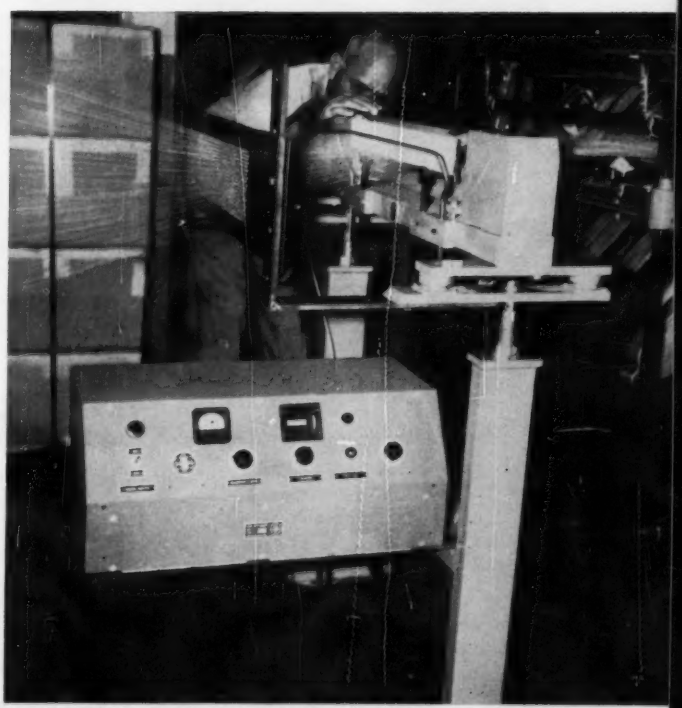
Cut tricot seconds 350%

That's what the Warp Yarn Monitor did for Dora Knitting Co.

Staff prepared—Exclusive

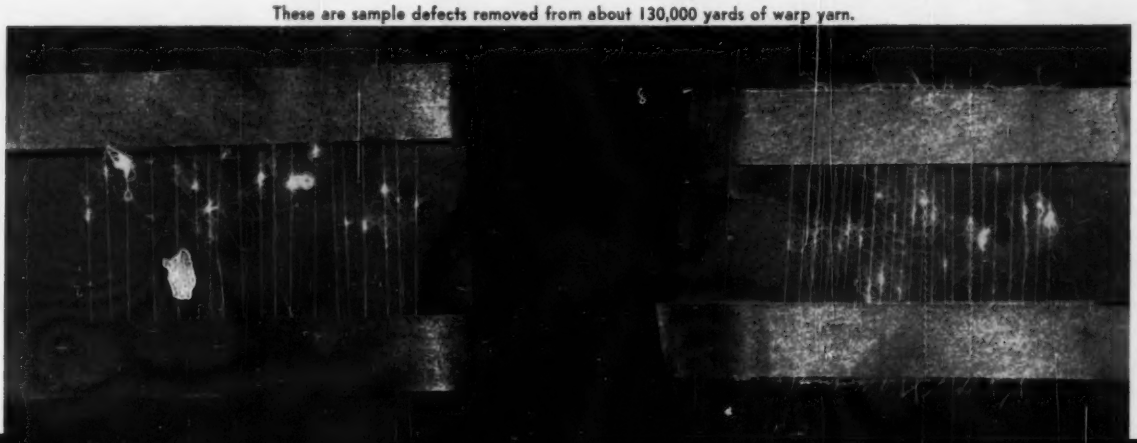
A WARP Yarn Monitor has been in operation on a tricot warper for about two years with exceptional results at Dora Knitting Co., Shelby, N. C. The device was purchased as part of a program to raise quality standards in processing nylon yarns from 15 to 50 denier.

The Warp Yarn Monitor is a photoelectric device which is placed to the rear of the warper. The yarn, condensed into a flat sheet, passes through a light beam; defects above a preselected size stop the warper. The defect and the stop are counted. The Monitor will detect defects as small as a single



The Warp Yarn Monitor by Fabrionics has been operating at Dora Knitting Co. for two years; seconds are down from 2½-3% to about 0.75%—paying off the investment in eight months.

These are sample defects removed from about 130,000 yards of warp yarn.



Textured Impressions

Fabrics knitted on the Wildman Jacquard JSD circular knitting machine create lasting impressions in the outerwear line. UNLIMITED pattern range enables fabrics to be knitted that are classics in design and texture.

Double piqué . . . Twill Back . . . Blister . . . Rib . . . Tuck . . . Two-Three-Four Color Welt Back Fabrics. Ideal for high production of unique fabrics. Ask for complete details on this new model, the JSD.

WILDMAN JACQUARD

WILDMAN JACQUARD CO. • 1210 Stanbridge St. • Norristown, Penna. • Manufacturers of HEMPHILL BANNER Knitting Machines
A subsidiary of Draper Corporation, Hopedale, Mass.

The only circular knitting machine using a true Jacquard patterning mechanism.

broken filament; at Dora it puts the finger on long-tail knots, big knots, broken filaments, loose ends, slubs, and foreign matter.

Before the Monitor was installed, Dora averaged 80 to 90 racks per imperfection, on a 40-denier jersey fabric. After the Monitor was hooked up, there were 450 racks per imperfection on a 20,000-pound test run of the same fabric. Seconds at Dora have been reduced from 2½-3% to about 0.75%; on this basis the device paid for itself in eight months of use.

The Warp Yarn Monitor has been found suitable for checking all types of synthetics (it's also suitable for cotton and wool), with two exceptions: zero-twist filaments and acetate yarns. The comparatively weak acetate filaments tend to be broken by the slight tension put on them by the device; zero-twist yarn also has not yet been successfully run through the Monitor. However, there is less need for the Monitor with zero-twist yarn, since it is usually satisfactory for tricot knitting as it comes from the producer. R. E. Duvall, superintendent at Dora, reports that experiments are being conducted to adapt the Monitor for both of these yarns.

Getting the most from man-made fibers

WHILE the range of fibers and yarns suitable for knitted fabrics was large and varied even a quarter of a century ago, the fabric engineer today has in addition a bewildering and growing array of man-made fibers. Besides, new types of knitting machinery have made possible new stitches, and the new fibers offer new fabric possibilities on old machines. New finishing techniques have also added to the growing list of knitted fabrics for apparel and industrial uses.

Where, then, does one start to develop a new fabric from this vast choice of materials and equipment? This problem served as the basis of a paper, "Engineering New Knitted Fabrics from Man-Made Fibers," presented by James H. Blore, Fabric Research & Development, Fair-Tex Mills, Inc., Catasauqua, Pa., at the recent Seventh Canadian Textile Seminar.

Mr. Blore outlined three avenues by which new fabric developments can come about:

1. The customer or sales force can request a certain fabric for a specific end use.

2. The fabric engineer can develop a fabric with the hope that a market will be found for it.

3. The fabric engineer can recognize the need for a certain fabric and then proceed to develop it.

The latter method requires a wide knowledge of fiber characteristics and knitting techniques, together with an up-to-date knowledge of the market. In selecting a fiber, the value of the end product is often a determining factor, and economies can be gained by studying price changes of fibers. But consideration should also be given to the strength of merchandising programs for fibers, and to the merchandising aids offered, which create consumer demand and hence can influence sales.

Man-made fibers today offer endless possibilities for fabrics in a wide range of color combinations and colored patterns. Fibers can be selected from solution-dyed color ranges, as in the case of acrylics, rayons, and acetate; and colored effects can be developed by cross-dyeing and by blending man-made and natural fibers and subsequently dyeing in the piece.

Further possibilities are offered by the utilization of bright and dull fibers in spun and filament yarn form to produce two-tone effects when dyed.

To Stretch Or Not To Stretch. Through the use of man-made fibers the elasticity of knitted fabrics can be improved or eliminated. The new elastomers are ideal for use in swimwear and girdles where elasticity is desirable. These yarns are stronger and finer and can sometimes be used without covering.

Stretch-nylon yarns can also produce good lengthwise elasticity if knitted with a long-enough loop. Widthwise elasticity can be incorporated in a stretch-yarn fabric by laying in an elastomer or by using a 1 x 1 or 2 x 2 rib stitch.

Rigidity in the widthwise direction can be controlled by employing a 1 x 1 or 3 x 1 lay-in stitch on a jersey float-stitch base. The lay-in yarn may be of any non-stretch fiber, although a high-shrink or high-bulk acrylic provides a firmer foundation. Lengthwise rigidity can be obtained with the use of high-shrink acrylic yarns using a tight stitch. A high-bulk lay-in yarn knitted on a float-stitch base provides exceptional stability in both directions.

Drapable and Washable. Drape can be built in by proper selection of fiber, and by stitch and finishing procedures. Firmness can be achieved by adding a percentage of wool to the blend, using coarse deniers and longer-staple man-made fibers, by adding stiffening agents, or by heat-setting techniques. Pique or rodier stitches add more body and a firmer drape to man-made fiber than the basic jersey stitch.

Machine washability can be obtained by using yarns of polyester, polyamide, or acrylic fibers, or blends of these. For best results when these blends are used, not more than 50% of a natural fiber should be used. The polyester and polyamide fabrics should be heat set. Construction also plays a vital part. For jersey fabrics, the cotton yarn count should equal at least cut 2

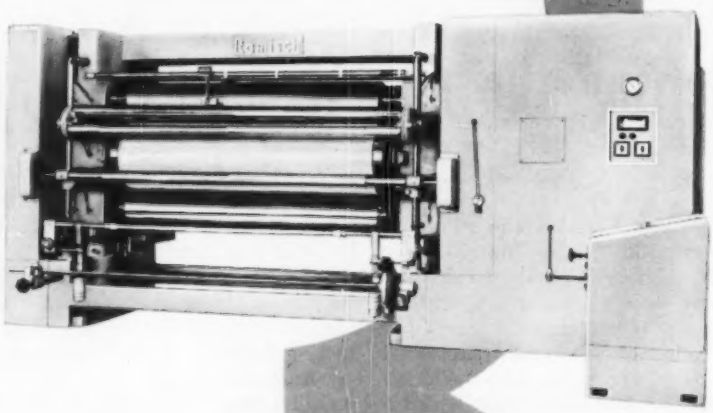
———; for high-bulk yarns, the
18

Continued page 127

TRIPLE PURPOSE RAMISCH TRICOT SCHREINER CALENDER

THIS VERSATILE MACHINE REQUIRES ONLY 30 MINUTES TO CHANGE OVER FROM—

- Schreinering
- Flat Embossing
- Relief Embossing



We have added this renowned equipment to our line because we believe it is unexcelled in construction, performance and range. Its multi-functional usefulness permits mill-owners a variety of finishes plus substantial savings. Briefly, some of its unique features are:

The upper bowl for each of the various processes can be readily removed owing to a special roller coupling device. You need no more than 30 minutes to detach the bowl from the calender frame and exchange it for another, without disturbing drive or drive gear.

Dr. Ramisch & Co. in West Germany are one of the most experienced firms in the calender line. Its many products cover the entire range and needs of the textile industry.

Reiner also offers machines for handling woven goods, for laboratory use, and special effects.

Complete descriptive literature, Schreinering and other sample swatches upon request.

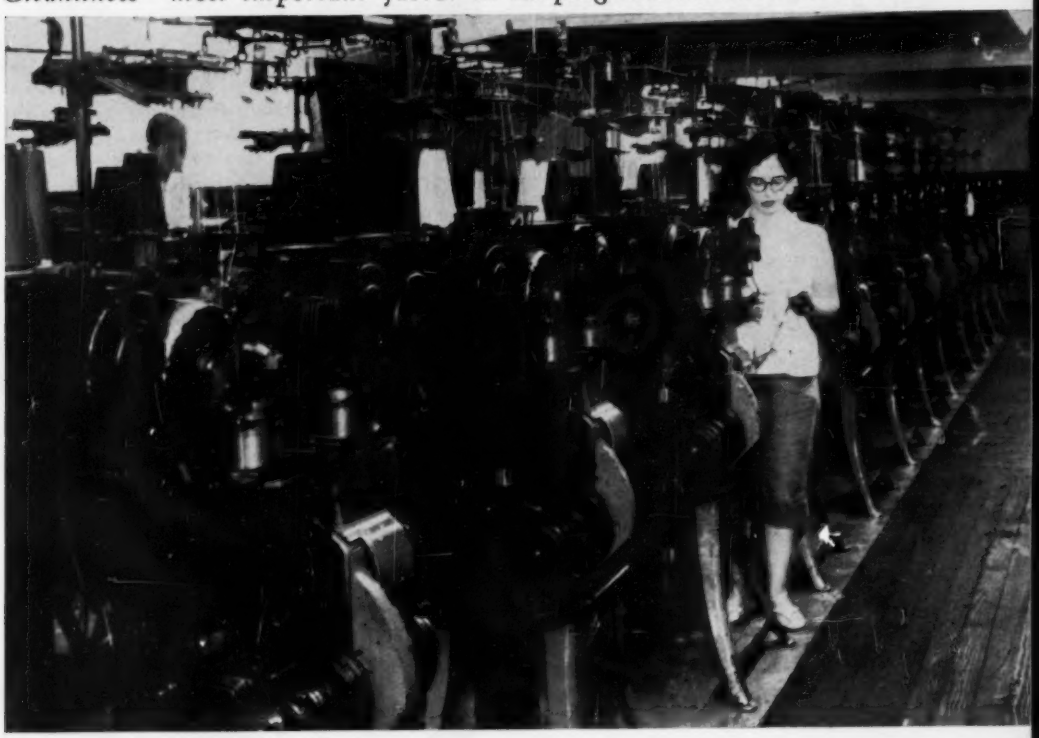
ROBERT REINER, INCORPORATED

Telephone: UNion 7-0502—From New York City call LOngacre 4-6882.

WEEHAWKEN (Only 10 minutes from Times Square by direct bus) NEW JERSEY

AN HONORED NAME IN TEXTILE MACHINES SINCE 1903.

Cleanliness—most important factor in keeping maintenance costs low



Clean more, profit more

Staff prepared

Exclusive

"CLEANLINESS is next to godliness," according to the old saying, and what's more, it pays dividends in a knitting mill. So says R. W. Summers, owner of the Summers Hosiery Mill at Gibsonville, N. C., who adds that no other single factor is so important in keeping maintenance costs at a minimum.

The Summers mill has about 50 SCP and SCOP knitting machines in operation on fancy argyle patterns, with some S & W B-5 machines making plain terry-sole work socks.

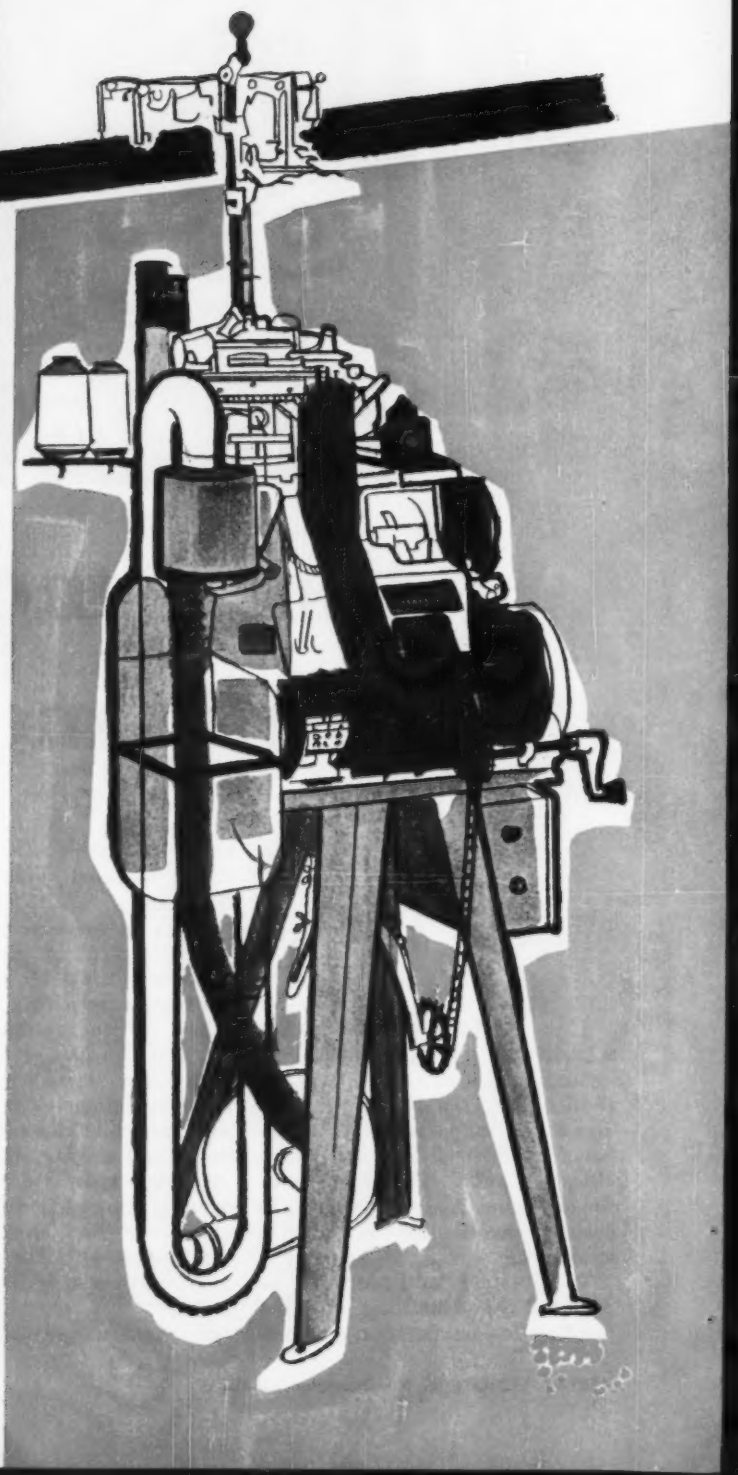
From his 40 years of experience in knitting—20 of them as owner of his own mill—Mr. Summers set a schedule requiring that lint be blown off the machines twice a day and oil wiped off the machines with cotton waste once a week. A detergent motor oil is used on the machines, lubrication is done sparingly, and keeping oil off the knit goods is a must. No varnish or oil scum is allowed to dry on the machines to hold lint and other foreign matter.

A multiviscosity oil is used for increased cleanliness. No black metal-containing residue is held in the machines—dirt and metal particles are suspended in the oil and are wiped away at the next cleaning.

At this mill, repair parts, needles, replacements, and pattern changes are a low 2-3% of overhead, with most of this chargeable to pattern changes. This rock-bottom cost is attributed directly to cleanliness and proper lubrication.

Another tip passed on by Mr. Summers is to have fixing on a machine done by only one man; he then has the responsibility and the incentive to do a good job. If more than one man works on a machine, nobody can keep track of the changes made.

now peak production of the finest seamless nylon stockings



announcing the new "Reading-Booton" twin-feed machine

- **2-feed automatic, highly efficient end trimmer. Trims all ends to a length of from ¼ to ⅜ inch.**
- **New high standard of fabric quality**
- **Continuous, high-speed production**

The new "Reading-Booton" Twin-Feed Machine opens new profit possibilities in the knitting of ladies' seamless stockings. It gives you twin-feed production, plus amazing simplicity of operation, and trouble-free performance.

New features developed by Textile Machine Works for the proven Booton Machine. This new precision machine belongs in your production planning. Backed by our world-wide service organization. You'll want to see the new "Reading-Booton" in operation before you buy any seamless machine. Call us today.

TEXTILE MACHINE WORKS

READING, PENNA.

Man-made fibers

(from page 123)

formula $\frac{\text{cut } 2}{20}$ can be used.

The course-wale ratio should be maintained at 1.2 to 1, at least, to get minimum shrinkage.

Soft and Pill Resistant. Hand can be controlled by judicious choice of fiber, denier, spinning system, twist, stitch construction, and finish. Acrylics provide a softer hand; high-bulk yarns and one- and two-denier fibers will further improve softness. For maximum softness, plain-jersey or interlock stitch should be chosen and tight stitches should be avoided.

Pill resistance can be built-in by employing fiber deniers of 4.5 and higher. If fine counts are required, high-shrinkage fibers of 2 or 3 denier can be spun with low-shrinkage coarse fibers of 6 or 10 denier to form a sheath around the fine fibers. Turbo yarns with higher than normal twist should be used.

An interesting yarn combination consists of a fine bright nylon twisted with a fine acrylic which facilitates knitting; the nylon protects the acrylic from pilling and provides interesting cross-dye possibilities.

In concluding, Mr. Blore pointed out that after the fabric is knitted and finished the following data should be collected:

1. Yarn details—fiber percentage, denier, staple length, etc.
2. Machine—cut or gauge, diameter, etc.
3. Construction — stitch type, courses and wales per inch, etc.
4. Finishing procedures—dyeing method, formulations, machinery settings and temperatures, etc.
5. Test results—shrinkage after laundering, pilling propensity, etc.

Finishing conference

(from page 94)

producing shrinkage control and wrinkle resistance.

Experimentation and theoretical calculations have shown that reactive sites in linen, cotton, and rayon vary not only with fiber type, but also with chemical structure and size of the crosslinking agent. Though chemical bonding with fiber molecules takes place, all crosslinking reactions on fibrous cellulose are heterogeneous reactions. Auxiliary reactions also take place at different morphological sites, leaving available reactive sites unreacted.

The heterogeneous and localized crosslinking reactions are shown to be responsible for the mechanical loss in strength upon crosslinking. The hypothesis is presented, with some experimental proof, that if cellulose fibers could be homogeneously impregnated in a swollen state with crosslinking agents and crosslinked under extremely high tensions to cause alignment of the cellulose polymer molecules, then there would not occur any loss in strength of the treated material.

Though many chemicals are available to produce dimensional stability and wrinkle resistance, important advances cannot be made, Mr. Gagliardi concluded, until more knowledge is obtained on where and how to better react these with cellulosic fibers, and until new fabric structures are designed to meet particular end uses.

Recent developments

(from page 61)

backing developed by an English fiber producer. The emulsion is said to impart resistance to abrasion, fabric fraying, and waterborne stains.

Desizing Agent. From the U. S. S. R. has come a report of a new desizing agent derived from what is described as a "thermophile bacteria." The product is reputed to save time and cost in desizing starch-sized cottons.

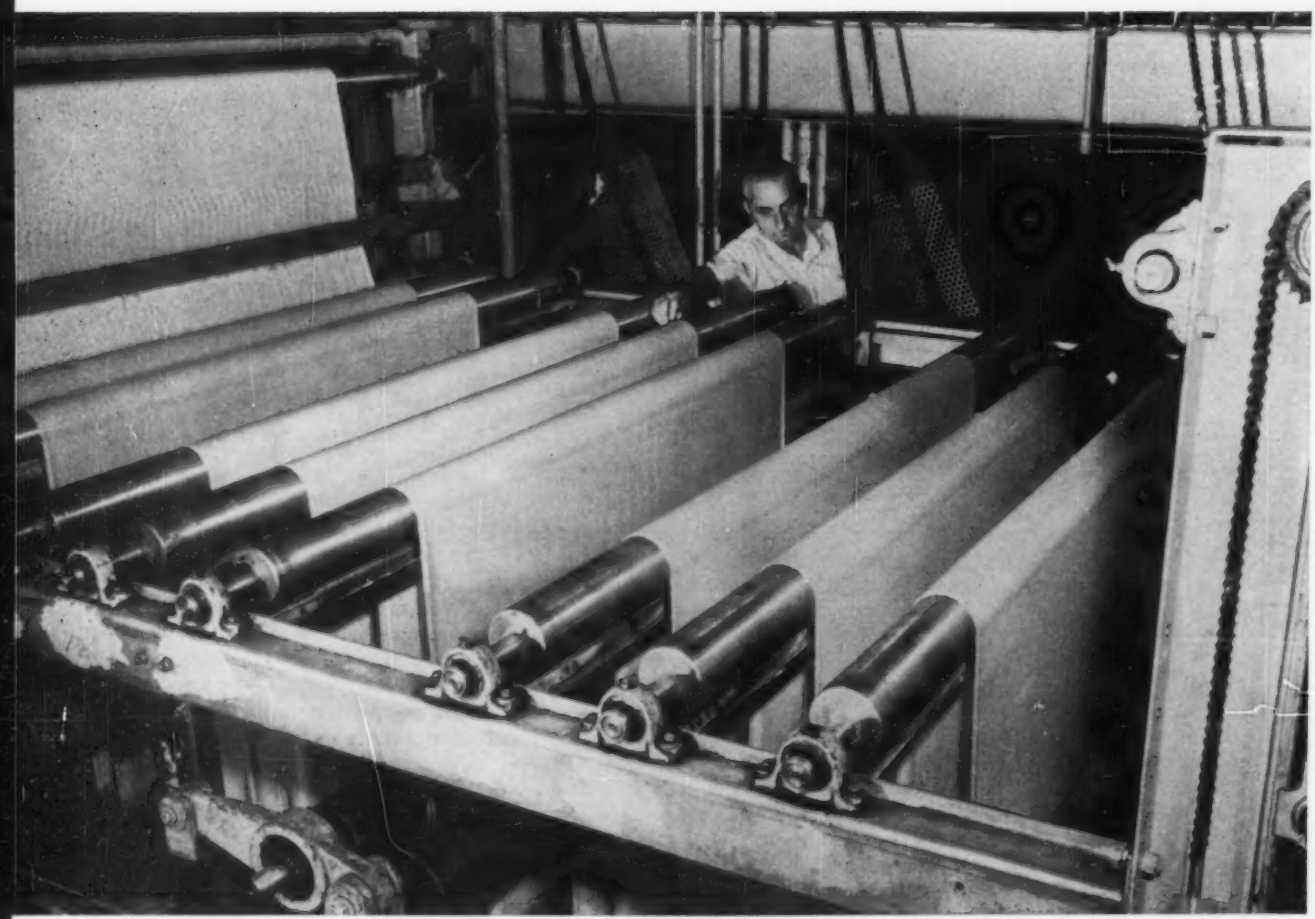
Polypropylene Screening. Tent screening made of polypropylene monofilaments, recently introduced by Chicopee Mfg. Corp., is claimed to give high tensile strength, high burst strength, and low color deterioration.

Shrinkproofing Wool. Treatment originated at U.S. Dept of Agriculture laboratories involves covering of the wool fibers with a very thin coating of a polyamide (nylon-like) material. Treated fabrics are dimensionally stable to repeated launderings without impairing soft hand. Process adds less than 1% of weight and requires no curing. Combination with earlier publicized ethanolamine treatment for imparting permanent pleats and creases in wool fabrics said to be practical.

Fusing Crease in Garments. A British patent assigned to the British Nylon Spinners discloses a method for fusing a crease in garments by inserting a monofilament of a low-melting thermoplastic material in the small angle of the crease, then subjecting it to heat and pressure to unite the core with the fabric.

Waterproof Finishes. Originally developed in connection with the manufacture of electric batteries, Reeves Bros., Inc., is now marketing a new waterproofing finish for outerwear which permits free passage of water vapor. Treated fabric is 100% waterproof. Also recently announced was a new "breathable" nylon tent fabric in which the plastic coating has a microporous structure which eliminates condensation while affording resistance to water penetration. It is claimed that a 4-ounce nylon fabric construction is equivalent to a 10-ounce duck fabric in resistance to water penetration.

Roll, roll, roll your bolts gently o'er the Stainless



Time and again, this plant had to replace parts in the carbonizing unit because the materials couldn't withstand the sulfuric acid solution that helps remove burrs and bits of grass from semi-finished woolen fabric. Nine years ago they put in Stainless Steel and practically eliminated replacement costs. The Stainless Steel parts are still going strong. Plant Engineers expect them to last at least 30 more years.

This mark tells you a product is made of modern, dependable Steel.

With this plant's old style dye kettles they were limited to only one shade because the vats couldn't be thoroughly cleaned to allow for a different color. Now they have Stainless Steel equipment and all they do for a color change is flush out the dyeing units. There's no color carry-over. No residue to foul up a new batch.

Here in this plant, highly corrosive chemicals ate into the old equipment and left the surface rough and pitted. This surface became abrasive and sometimes shredded the fabric. They installed Stainless Steel equipment and now there's no torn fabric or contamination problem. The company has virtually eliminated product rejections.

Specify Stainless Steel equipment and repair parts for your plant. No other material can match the performance or product purity of USS Stainless Steel.

USS is a registered trademark

USS

United States Steel Corporation—Pittsburgh
American Steel & Wire—Cleveland
National Tube—Pittsburgh
Columbia-Geneva Steel—San Francisco
Tennessee Coal & Iron—Fairfield, Alabama
United States Steel Supply—Steel Service Centers
United States Steel Export Company

United States Steel

Bulletin 1209
Loom Switch

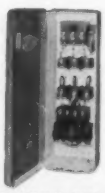
Draper Loom equipped with an

Allen-Bradley Lint Tight Manual Starter

Bulletin 1209 loom switches provide complete protection against accidental operation, lint, and humidity. The switch mechanism can be operated *only* by deliberate action of the special control knob—not by "kicking" or in any other manner. In addition, the switch mechanism can be locked OPEN, and the cover padlocked to prevent unauthorized operation.

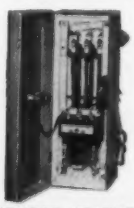
A-B loom switches have double break, silver alloy contacts that never need servicing, and their "positive" snap action prevents contact welding and also prolongs contact life. The enclosures are lint tight to eliminate fire hazards, and a special finish provides permanent resistance to corrosion in hot and humid atmospheres. Send for details on these A-B quality loom switches.

ACROSS-THE-LINE
SOLENOID STARTERS
Ratings to 450 hp, 220 v;
900 hp, 440-550 v.
BULLETIN 709



COMBINATION STARTERS
Ratings to 100 hp, 220 v;
200 hp, 440-550 v.
BULLETIN 712

REDUCED VOLTAGE
AUTOTRANSFORMER STARTERS
Ratings to 75 hp, 220 v;
125 hp, 440-550 v.
BULLETIN 646



REDUCED VOLTAGE
RESISTANCE STARTERS
Ratings to 200 hp,
220-440-550 v.
BULLETIN 640

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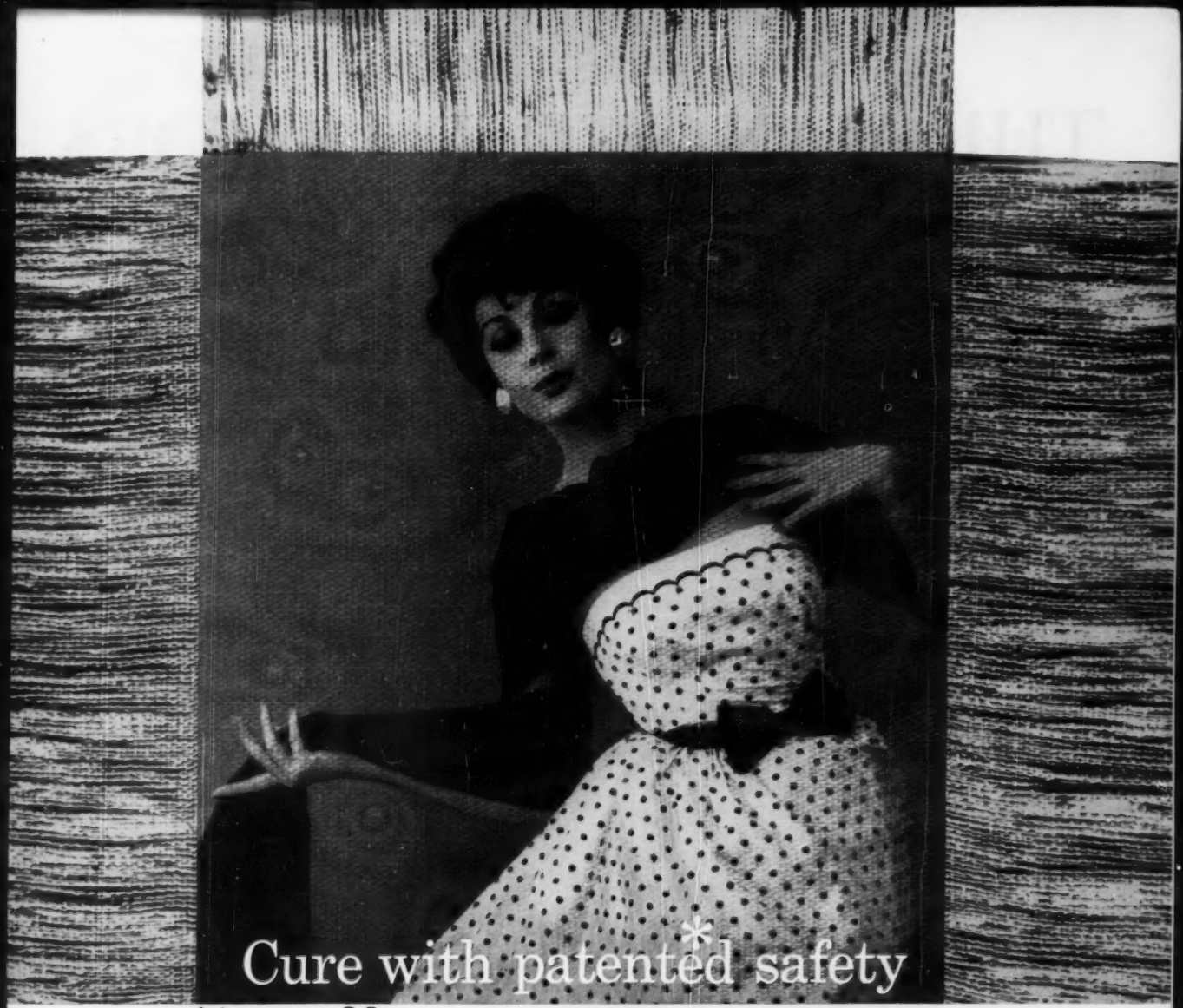
QUALITY MOTOR CONTROL



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are designed to give consistently safe and efficient curing of thermosetting textile resins. These Monsanto accelerators offer you a unique combination of performance advantages—excellent bath stability, maximum performance with minimum resin add-on and compatibility with practically all textile finishing agents. Write for complete technical data and expert finishing counsel, to Monsanto Chemical Company, Plastics Division, Room 798, Springfield 2, Massachusetts.

*Monsanto is the owner of U.S. Patent No. 2,467,160 covering compositions of acid curing aminoplasts with a hydroxy amine salt as a latent curing catalyst.

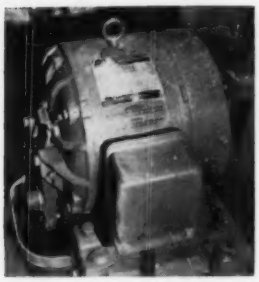
Monsanto

MONSANTO ORIGINATOR IN **PLASTICS**

Other Monsanto outstanding textile chemicals include: Resloom® E-63 chlorine resistant resin; Resloom E-50 cyclic urea resin; Resloom HP and M-75 melamine resins; Stymer® sizes; Lytron® polystyrene latices and acrylic interpolymers.

THE MAN & THE MOTORS

FROM WESTINGHOUSE



Mr. Westinghouse* and 160 clutch brake loom motors bang shuttles across 50-inch print cloth looms at 65 mph . . . no failures in 599,000 hours

How to drive a shuttle across a 50-inch loom a mile a minute—instant start and stop, 3 times a second—24 hours a day. One of the industry's largest print cloth producers has put 160 Westinghouse units through this motor-murdering duty a total of over a half million operating hours. No failures. High-speed, never-ending vibration, tremendous torque, and still Westinghouse tough, simply designed drives have cut maintenance 66% compared to other motors. "We operate 1830 looms in this plant, and, under present plans, we will probably replace the older drives (when it is economically sound to do so) with Westinghouse motors," says the mill president.

Call in The Man from Westinghouse for all your electrical drive or related control requirements. With his experience in the textile industry, backed by the industry's best motor research and development facilities, he'll show you how to save money . . . whether it's a shelf item or a custom-engineered job. For additional information write: Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa. *You can be sure . . . if it's Westinghouse.*

J-22163

*D. M. Lambert, Asheville, North Carolina, office.

Westinghouse

all about DRYING
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(audio) . . . by convected heat
(audio) . . . by radiated heat
(audio) . . . with infra-red
(audio) . . . or high frequency systems
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BUTTERWORTH . . . knows all about drying

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In the South: Industrial Heat Engineering Co., Greenville, S. C.
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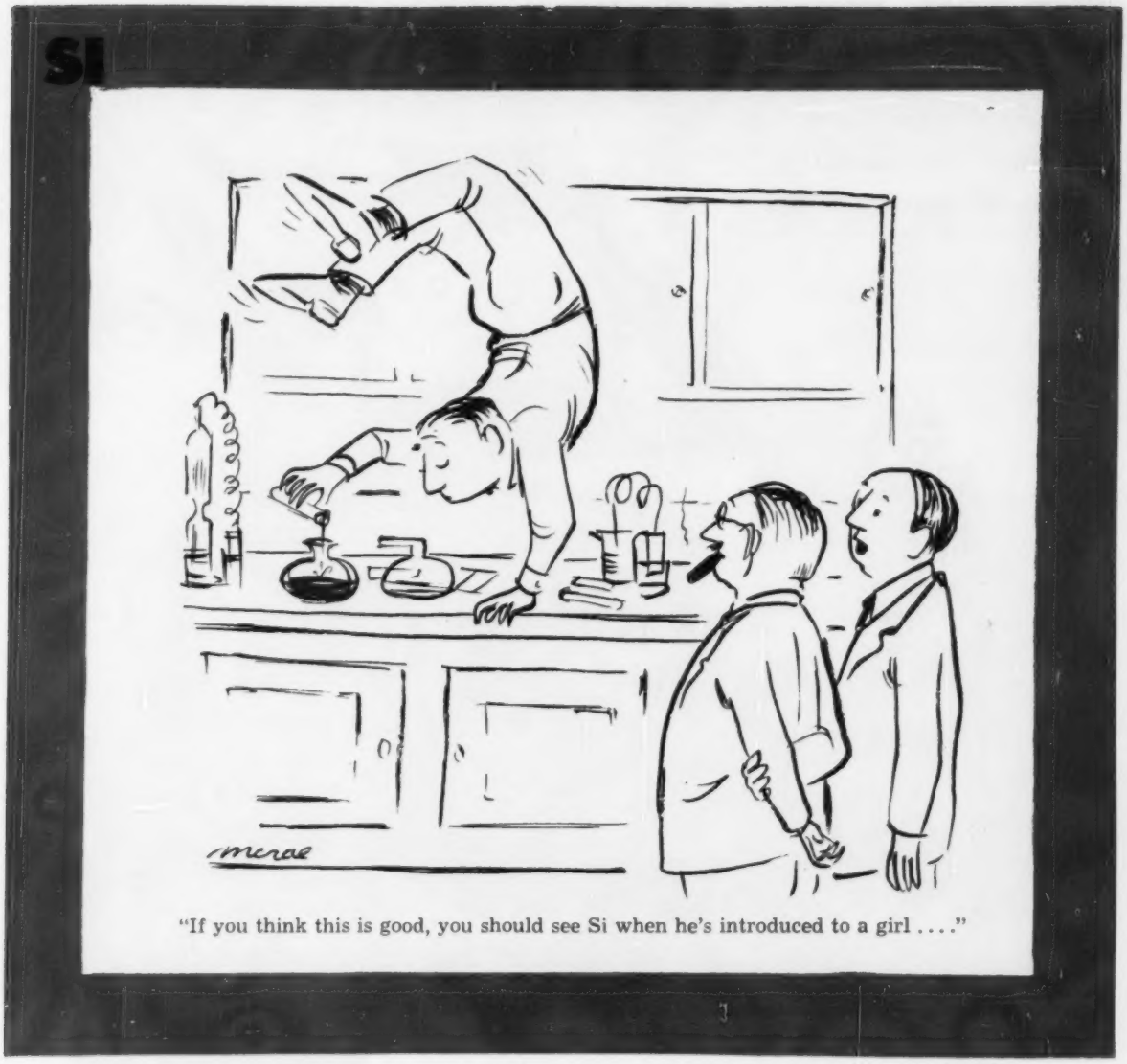


"If you think this is good, you should see Si when he's introduced to a girl . . . ."

Si behaves differently around different people. And our research and service departments behave differently on different problems; all can't be handled the same way.

So, whether your problem is the same old thing, or something entirely different—try Si and his staff.

Our entire experience for over half a century is yours for the asking.

Warp Sizing: *Softeners, Binders, Penetrants, Ty-In Penetrants, Shuttle Dressing, Waxes.*

Wet Processing Chemicals and Auxiliaries: *Dye Assistants, Penetrants, Rewetting Agents, Sanforized Fabric Oils, Detergents, Scouring Agents, Softeners.*

Niagara Twist-Setter: *Yarn Conditioning Penetrants.*

Seyco Warp Lubricator.

Headquarters for textile chemicals

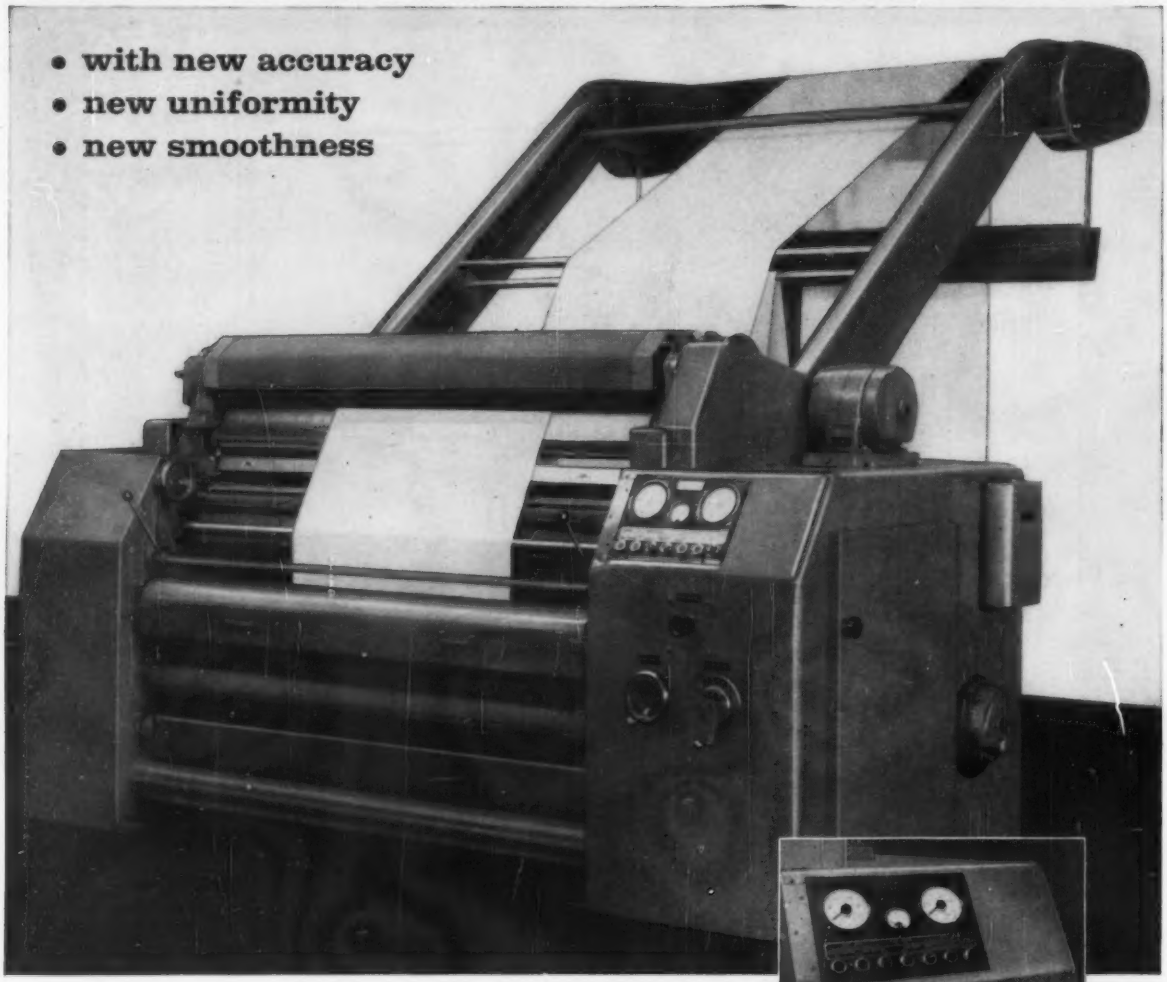
SEYDEL-WOOLLEY & CO.

748 RICE STREET, ATLANTA, GEORGIA

SEYCO

THE FRANKLIN SHEAR-

- with new accuracy
- new uniformity
- new smoothness



Put a whole new face on woolens, worsteds, synthetics, knitgoods and high pile fabrics with this new Gessner finishing Machine.

Revolver and knife, anchored to the main frame, reduce vibration and chatter, to produce a remarkably accurate and even cut — every inch of it uniform and smooth. We hope you will want to know more about the Franklin Shear.

DAVID GESSNER CO.

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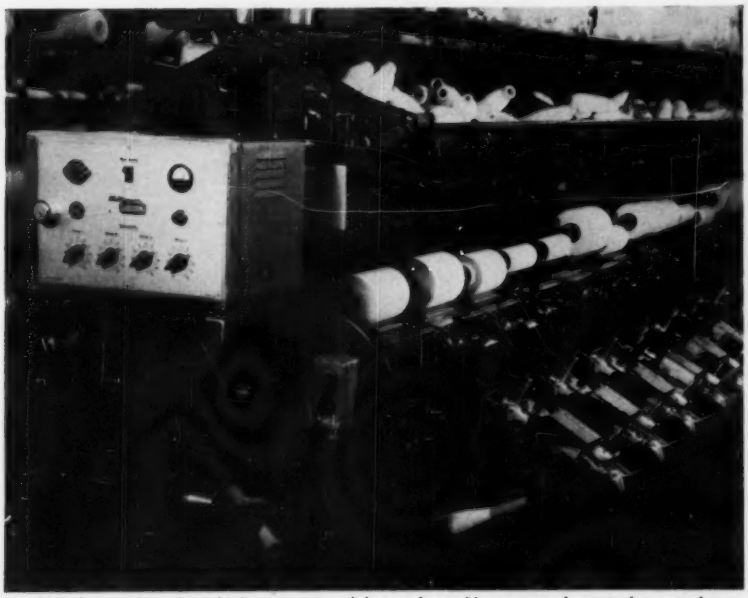
Montreal, Quebec; Hamilton, Ontario

NEW PRODUCT PARADE

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors.



Winder equipped with Spectomatic slub catchers. Note central control on end.

Close-up of the slub detecting unit.

Winder attachment removes 95% of slubs in yarn

A transistor-equipped electronic slub catcher, which can be mounted directly on the existing winder arm, removes up to 95 per cent of the slubs with a minimum of loss in winding efficiency. Designated the "Spectomatic" slub catcher, it can be set from a central position to automatically compensate for size variations in yarn and assure elimination of defects which should be removed. At the same time, the device will allow certain defects to pass when the knot would be more serious than the defect.

Design of the mounting unit for this slub catcher enables winder tenders to retie and put up the end with movements similar to those used in retying an end on a mechanical slub catcher. The unit operates on low voltage, is not affected by power fluctuation or vibration, and is ready for operation when turned on.

Two types of this slub catcher are manufactured, one for long staple yarns and one for cotton yarns primarily.

Uster Corp., 2516 Wilkinson Blvd., Charlotte 8, N. C.

Do you want more data? Write supplier or use card on page 153; list N-101

Rotary dyeing machine also washes goods

A combination dyeing and washing machine recently introduced is particularly advantageous for the processing of knitgoods and narrow fabrics. Based on the rotary dyeing machine principle (except that the cylinder is of the open pocket type), this machine provides flexibility for the washing cycle and dyeing or bleaching cycle in subsequent operations without any handling of goods being required between processes.

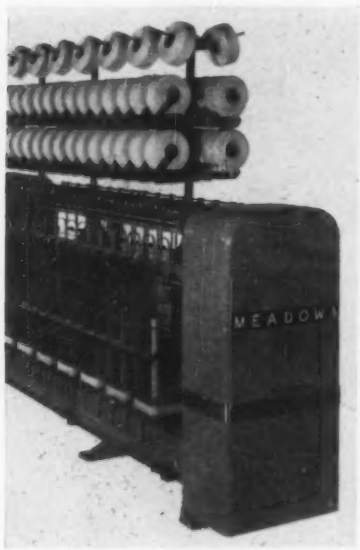
A variable speed drive makes it possible to run the cylinder at any speed within the range of 6 to 25

rpm, thereby providing the additional agitation required for washing. This feature is especially useful for processing hose made of Agilon and similar yarns which require increased cylinder speed. An adjustable timer allows reversal adjustment as desired.

Venango Engineering Co., 8300 Torresdale Ave., Philadelphia 36, Pa.

Do you want more data? Write supplier or use card on page 153; list N-102

Space-saving, high-production twister for fine yarns



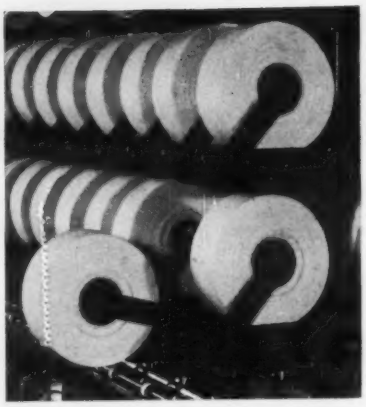
A new 25"-wide twister, the Meadows Model "N", was designed for fine yarn mills that require both high speeds and large packages. On this completely antifriction machine the large package is obtained with increased package length rather than diameter—the twister can be supplied with bobbin builds up to 15" long. Gauges available range from 3" to 5½".

Among construction features of the machine are the following: double or single line ball bearing bottom rolls; 10" diameter individual drive pulleys mounted on self-aligning ball bearings; roller bearing spindles; ball bearing double idlers which allow easy reversing and any necessary belt take-up; "stationary lifter rods" with combination steel and cast iron ring rail seats equipped with ball bearing rollers to eliminate lifter bushings; steel ring rails counterbalanced by heavy tension springs for smooth ring rail operation; stationary separators of the windshield type; thread guide and balloon control rings traverse directly as a unit with the ring rail, providing constant yarn balloon and yarn tension; silent chain drive; easy conversion from S to Z twist—simply swing one intermediate gear; "hood" action door on head end swings up and back to avoid blocking aisles.

For mills that twist yarns from Barber-Colman cheeses a hinge-type creel can be furnished to simplify creeling and allow maximum utilization of creel space.

Meadows Mfg. Co., P. O. Box 10997, Atlanta 10, Ga.

Do you want more data? Write supplier or use card on page 153; list N-103



Pulsating nozzles make loom cleaner more effective

A significant feature of the new "Whirl Air" loom cleaner is the pulsating nozzle which rotates 360° to increase the cleaning efficiency of the ceiling-suspended unit.

Equipped with flexible sleeves which make it adaptable to any type of loom, this jet-type loom cleaner provides up to 50 per cent more air velocity and volume for thorough loom cleaning. In most instances, manual loom cleaning between warp changes is not required when this cleaner is used.

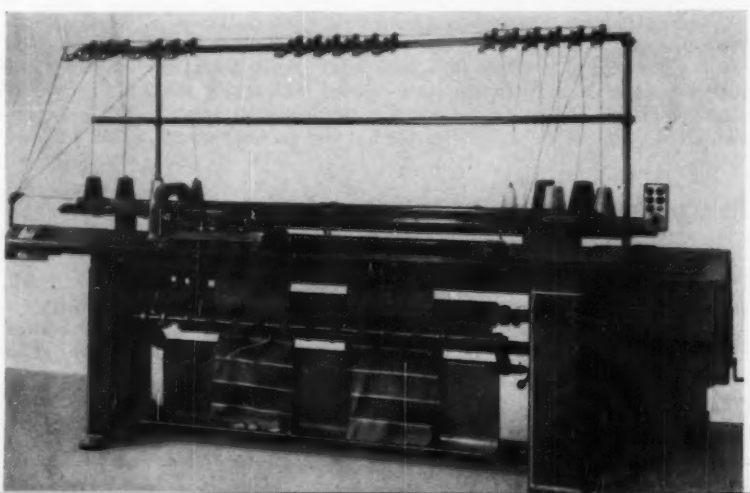
A 5 hp motor drives the loom cleaner. A vacuum floor sweeper and/or ceiling cleaner can be used in conjunction with it to further cut weave room operating costs.

The American MonoRail Co., 1111 E. 200th St., Cleveland 17, Ohio.

Do you want more data? Write supplier or use card on page 153; list N-104

Offers versatility for knitted outerwear mills

A broad range of patterns may be produced on the highly efficient Schaffhouse DOFU power knitting machine (double lock) with stitch transfer. This easy-to-adjust-and-maintain machine makes all classical stitches, such as 1 x 1 rib, single side fabrics, cardigan and half



cardigan, tubular, knops, racked designs, etc. Loop transferring may be accomplished on all needles or on high butt needles only, or according to position of the jacks, from the front to the back needle bed or vice versa. Loop transferring to empty needles is also possible. The machine will automatically change from 2 x 2 rib to 1 x 1 rib or to single side fabric (jersey), or from 1 x 1 rib or jersey to 2 x 2 rib. On the 12 gauge model, production of 56 rows of stitches per minute is possible.

Carriage is driven by roller chain. Smooth reversing is assured by large diameter of chain wheels. Speed of carriage can be altered steplessly by the variable V-belt pulley. Machine is driven by a two-speed motor, and stopped either by a hole in pasteboard card control or by preset piece counter. Efficient stop motions stop machine in case of yarn breaking or running out, large knots, overload or shock, or any other resistance of carriage. Cause of stop is indicated by signal light.

Robert Reiner, Inc., Weehawken, N. J.

Do you want more data? Write supplier or use card on page 153; list N-105

Puts 40-50% more roving in same size package

By simply replacing conventional flyers on a roving frame with the new Maier F-type flyers, 40 to 50 per cent more roving can be wound on a bobbin without increasing the package size. Consequently, doffing costs are reduced, less spinning frame creeling is required, fewer ends come down, and there is less roving bobbin waste.

This flyer accomplishes the weight increase by laying the roving closer together (compressing it) and winding it without friction on the bobbin. At the end of the presser, which is under spring pressure, is an anti-friction-bearing-equipped roller that needs no maintenance. Dynamically balanced to reduce vibration, the flyer has a chrome-plated finish.

Watson & Desmond, Inc., P. O. Box 1954, Charlotte, N. C.

Do you want more data? Write supplier or use card on page 153; list N-106

24" and 30" card coilers reduce handling costs

Now available for processing cotton, man-made fibers, and wool, or blends of these, are two card coilers which accommodate exceptionally large sliver cans—a 24" unit and a 30" unit. These large coilers are particularly advantageous in cotton mills with the new high-speed drawing frames and in worsted system mills where coarse carpet type yarns are produced.

The head of these coilers is designed to give a small inside can center coil of the type common in bicoil drawing and wool card coilers. This makes it possible to keep the over-all height of the coiler within reasonable limits—for example, the 24" coiler accommodates a 24" x 48" can. The can table is gear driven.

Other construction features: sealed and lubricated ball bearings throughout, cut tooth gears throughout, tubular steel stand, precision-ground calender rolls, self-aligning pillow blocks on upright and calendar roll shafts, fully adjustable can table.

The 24" card coiler.

An optional feature is a can table designed for use with the "Alley-Skat" dollies which fasten to the bottom of silver cans to facilitate doffing and moving of heavy cans.

Southern States Equipment Co., Hampton, Ga.

Do you want more data? Write supplier or use card on page 153; list N-107

Stationary ceiling cleaner

Especially adaptable and advantageous where overhead installations or obstructions prevent use of track-mounted cleaning systems is the Bahnson "Circulaire" Overhead Cleaner. Suspended directly from the ceiling, the unit provides automatic cleaning of ceilings, light fixtures, ducts, overhead structures, etc. Effective cleaning radius is 35 ft.

Full coverage action or "spot" or specific area cleaning may be obtained with the unit. For full coverage, the cleaner rotates in a full 360° arc as its fan oscillates from a horizontal position upward to 80° while discharging its cleaning air blasts. For spot cleaning it can be factory adjusted for any special degree of oscillation within the 80° angle; also, the rotation can be controlled to automatically clean for a full 360° or for predetermined increments.

The Bahnson Co., 1001 S. Marshall St., Winston-Salem, N. C.

Do you want more data? Write supplier or use card on page 153; list N-108

Xmas gift plan gives employees their choice

A Christmas Gift Program recently announced is designed to please every employee and give him more for the money allocated for him. Also, it requires little effort on the part of mill personnel and provides savings in time and money.

The mill personnel director or other person designated by management simply selects eight or ten gift items in a predetermined price range from program sponsor's display of gifts. The sponsor will then deliver to the mill an eye-catching display of the selected gifts in a mobile showcase.

From this display each employee choses the gift he wants and then simply fills out a form (furnished

by the sponsor), indicating his choice. All gifts are delivered to the mill at one time before Christmas, in time for a personal touch to be added if desired and distribution to be made.

The sponsor also supplies toys for Christmas parties.

Smith Enterprises, Inc., P. O. Box 188, Rock Hill, S. C.

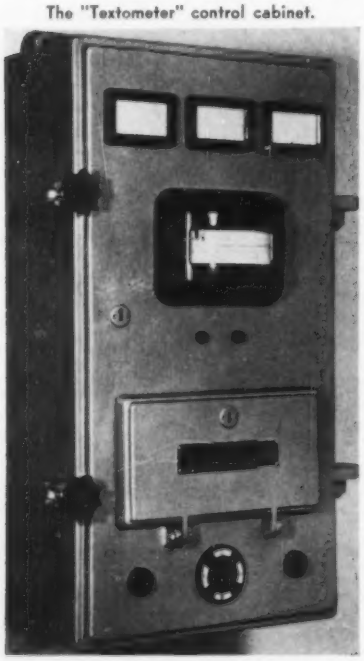
Do you want more data? Write supplier or use card on page 153; list N-109

Automatically controls moisture in yarn, fabrics

The Mount Hope "Textometer" accurately measures and automatically controls residual moisture of yarn coming off slashers or cloth delivered from tenter frames and dryers. Applicable to all kinds of yarns and fabrics, this instrument can improve quality, contribute substantially to lowered operating costs, and in some instances increase output.

Moisture content is measured by electrodes employed as sensing elements which pick up the electrical value corresponding to the amount of moisture present in the yarn or fabric. Conditions are immediately transmitted to the Textometer in the form of electrical impulses and visually recorded on one of the three panels of the unit's Tel-indicator. Machine operators can tell at a glance if material being processed has proper amount of moisture. The automatic control unit of the apparatus adjusts machine speeds automatically.

The "Textometer" control cabinet.

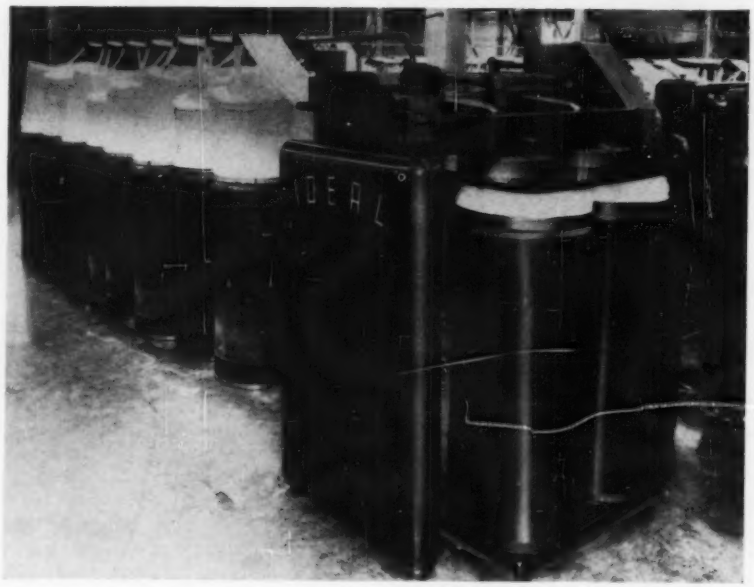


Optical accessories are available to record in graph form changes in machine speeds, quality of material, moisture content of any run.

Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

Do you want more data? Write supplier or use card on page 153; list N-110

Two-delivery drawing frame offers 750 fpm output



The Ideal Feathertouch "750" Drawing Frame maintains a front roll speed of 750 feet per minute without sacrifice of quality or efficiency. The two-delivery machine is of particular value in processing blends or a variety of numbers where one of these frames might produce all of the sliver necessary for a certain blend or an individual order. It also is an aid in preventing contamination when processing synthetics.

Readily adaptable to processing carded and combed cottons and all types of synthetics and blends ranging in length from ⅞" to 3", the machine is normally equipped to accommodate 18" x 42" cans for highest efficiency. A compact, individual automatic vacuum cleaning system, operated by a 1½ hp motor, replaces bottom and top roll clearers and removes a greater amount of dirt, trash, and non-spinnable fibers.

Smooth operation is another feature of the frame which is driven through an electro-magnetic clutch by a 1½ hp motor. Break backs are prevented from becoming singlings through provision for adjusting back apron. Low-voltage electric stop motions are provided for trumpet, predetermining yardage counter, top roll, and sliver spoons. Signal lights of different colors identify each source of knockoff. Double action trumpet knockoff eliminates need for double trumpets when processing synthetics.

Frame is compact, and operating parts are easily accessible. Adjustable spring weighting on calender rolls is a valuable feature when processing synthetics and blends. Sliver lift creels are available.

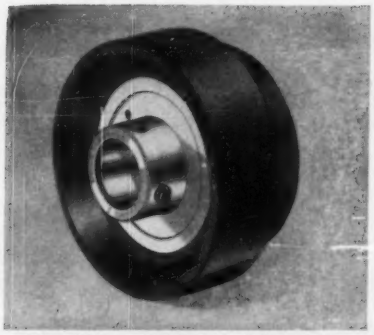
Ideal Industries, Inc., Bessemer City, N. C.

Do you want more data? Write supplier or use card on page 153; list N-111

Quick way to splice cloth for wet processing, coating

Among the advantages of a new method for fastening together two cloth ends preparatory to wet processing or coating are these: the splice can be made much quicker than a seam can be sewn; splice is extremely strong, permanent, heat-resistant, thin, and will withstand most wet processing operations.

Applicable to slick fabrics such as



Idler shell on driving roll which contacts the small end of cone on the Model 102. If this shell sticks on the bearing, it will cause hard nosed cones and burned yarns. Therefore, it requires the best in materials and workmanship.

Close delivery thread guide and dog for Foster Model 102. These parts are made from steel forgings which require very accurate and expensive dies. The finish on these parts also plays an important part in their performance.

Profilometer (which measures irregularities in millionths of an inch) used by Foster to test the inside surface of a tube which is part of the Model 102 for processing Textralized* yarn (*trademark of Joseph Bancroft & Sons).

Micro-Projector, an optical testing instrument used by Foster to magnify the silhouette of an object 62½ times and thereby reveal imperfections invisible to the naked eye.

How to Get
FULL VALUE
From Your
FOSTER WINDING EQUIPMENT

We don't have to tell you that in order to get full value from your Foster winding equipment, it must be properly maintained and repaired. The question is, how can you be assured of proper maintenance and repairing?

As to repairs, the first step is to use genuine Foster Repair Parts. Many Foster parts are made of special materials and have special finishes which cannot be duplicated with cheap substitutes. Furthermore, many Foster Parts are scientifically tested, before assembly, with high-priced testing equipment, which is not available in the ordinary machine shop. The illustrations herewith give a few examples of what we refer to.

Second, use *Preventive Maintenance*. By so doing you gain in 5 ways: — 1. Increased winding efficiency. 2. Less wear on and longer life of parts. 3. Better winding. 4. Improved customer relations (if you're a sales yarn mill). 5. Reduction in costly breakdowns. Without preventive maintenance, the same 5 gains turn into losses.

The best way to utilize preventive maintenance is to have a Foster Service Man make periodic inspections of all your Foster Winding Equipment, in conjunction with your Maintenance Supervisor. This Foster Service Man will give you a written report on the condition of your Foster equipment, will suggest improvements in maintenance practice, if necessary, and will recommend replacement of parts when advisable. There is no charge for this service *if* our representative is permitted to fit his visit to your mill into his planned call schedule.

If you would like to know more about getting full value from your Foster Winding Equipment, write for our three booklets: — "Preventive Maintenance", "Why Genuine Foster Parts" and "Emergencies are Costly". No obligations.

A Member of
American Textile Machinery Association

FOSTER MACHINE COMPANY
A Yarn Winder for Every Purpose

Westfield, Massachusetts, U.S.A.

SOUTHERN OFFICE — Johnston Bldg., Charlotte, N. C.

CANADIAN REPRESENTATIVE — Ross Whitehead & Co., Ltd., 2015 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont. • EUROPEAN REPRESENTATIVE — Muschamp Textile Machinery (Sales) Limited, Eider Works, Wellington Road, Ashton-under-Lyne, Lancashire, England.

377-0

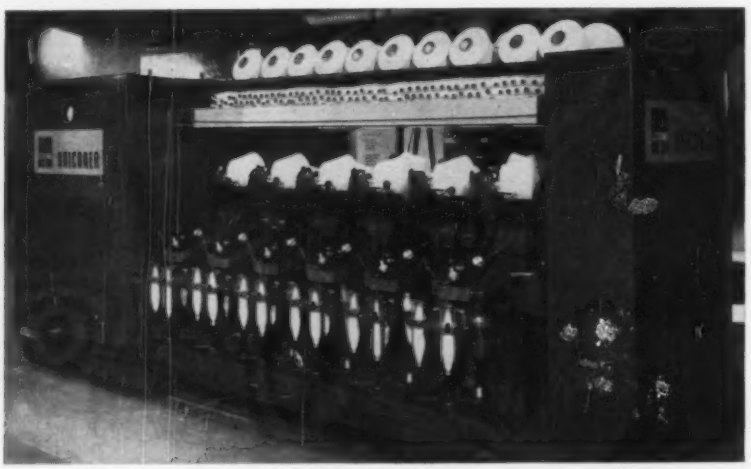
those made from glass yarns and to thin fabrics such as leno, the technique consists of positioning "Scotch-weld" No. 588 Bonding Film, a heat-activated tape, across the full width of the cloth, placing the other cloth end over the tape, and then "welding" the fabric ends together with heat and pressure from a portable, electrically-operated machine manufactured by Precision Machine Works, Inc., of Greenville, S. C. Splicing cycle requires from 12 to 40 seconds, depending on type of material.

For photos of this technique, see feature article which begins on page 80.

Minnesota Mining & Manufacturing Co., 900 Bush Ave., St. Paul 6, Minn.

Do you want more data? Write supplier or use card on page 153; list N-112

Automatic cone winder has knotter at each spindle



A new automatic cone winding machine, the "Uniconer," winds cotton and other spun yarns from bobbins to cones at speeds up to 1200 ypm and efficiencies up to 95 per cent. Each spindle is equipped with an automatic weaver's knot tying device, operating cycle of which is 10 seconds. Consequently, when yarn is broken for removal of defects such as slubs, gouts, and weak spots, it is rapidly retied and little production is lost.

Operator merely creels bobbins and doffs cones. Patrolling and rehandling of partial bobbins are avoided.

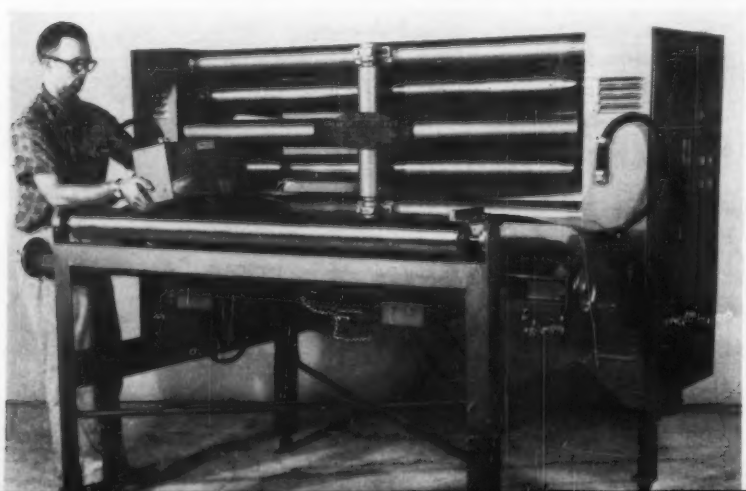
The double-sided machine, which consists of 12-spindle sections, has a self-contained vacuum and cleaning system.

Leesona Corp., P. O. Box 1605, Providence 1, R. I.

Do you want more data? Write supplier or use card on page 153; list N-113

Electronic weft straightener corrects three ways

Skews, bows, and skewed bows are automatically corrected by the American Skew-Bow Weft Straightener, a self-contained machine utilizing high speed servo motors for the purpose. The few adjustments required by the machine are made infrequently after the original settings are made—a change of cloth thread count, woven patterns or colors does not necessitate adjustment. Maintenance is facilitated by modular construction where complete sub-assembly changeout is easy and quick for mill personnel.



Four optical scanners beneath the cloth use a traveling dot of light at precise leading angles to the forward travel to generate two thread counts on each side of the material. Dual electronic counters located above the web on each side continuously measure a count from left to right and a count from right to left. A magnetic amplifier receives the four counts and by simple logic network gives independently amplified error signals to the power amplifiers which in turn drive the servo correction motors.

American Cloth-Strait Co., P. O. Box 3635, Charlotte 3, N. C.

Do you want more data? Write supplier or use card on page 153; list N-114

For IMPROVED and SPEEDED processing ... with REDUCED WASTE

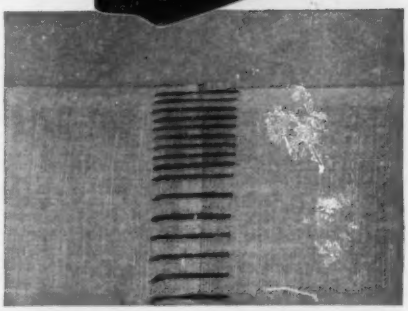
MERROW NOW OFFERS ... *IN A SINGLE MACHINE*

- ***WIDER STITCHING***

plus

- ***MULTIPLE STITCHING AT SELVAGES***

Style 60 Y3B
Butted Seamer



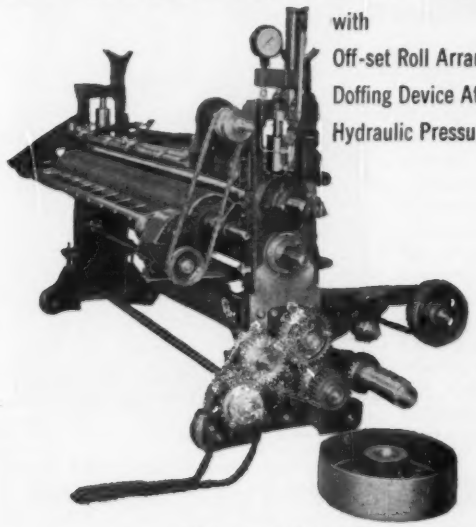
Some processors require a wide butted seam to eliminate "combing out" of coarse material under tension. Others, handling high count materials, need multiple stitching at the selvages for extra strength. Merrow now makes available a machine that fills **both** requirements.

The strong one thread seam (approximately 5/8" wide) is quickly and accurately formed by the high speed machine ... can be easily removed after processing. Result: improved processing ... higher production ... reduced waste.

TRADE MARK REG
The MERROW MACHINE COMPANY
2805 LAUREL ST. • HARTFORD, CONN. • U.S.A.

Request complete information on this or other machines in the Merrow **complete line** of butted seamers.

NEW "LIGHTWEIGHT" PERALTA® MACHINE



with
Off-set Roll Arrangement
Doffing Device Attachment
Hydraulic Pressure

Write for information.

Duesberg-Bosson of America, Inc.
Main Street Jeffersen, Mass. P.O. Box 25

DRONSFIELDS' PATENT ATLAS BRAND EMERY FILLET

U.S.A. Patent
2426441

STOCKED BY
THE PRINCIPAL MILL SUPPLY HOUSES
AND CARD MAKERS

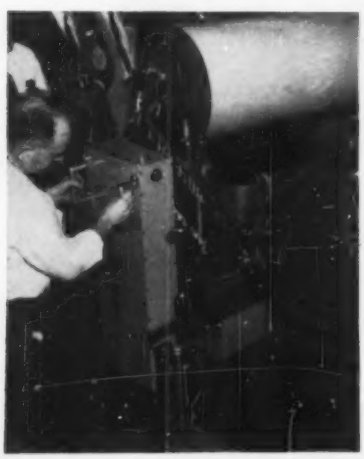
Cuts up to 75% off doffing costs

The W & G mobile spinning frame doffer runs on frame-mounted rails to doff a working average of 6000 to 8000 bobbins per hour—peak doffing rates are roughly three times that figure. It installs empty bobbins with virtually no end breakage, fits all frame gauges, is easily wheeled from one frame to another, is mechanically actuated, requires no wiring connections, and saves up to 75% on doffing costs.

The doffing units, rails, cams, etc., are offered on a rental basis; engineering service and spare parts are within 24 hours of the lessor; and installations are individually engineered.

Willcox & Gibbs Sewing Machine Co., 214 West 39th St., New York, N. Y.

Do you want more data? Write supplier or use card on page 153; list N-115

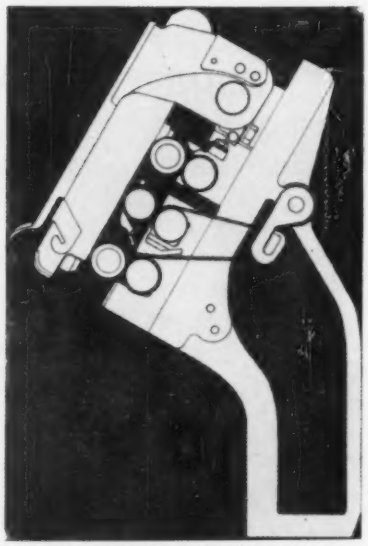


Spinning changeover offers maximum flexibility

Among advantages of the new Whitin UT3 Drafting Changeover for spinning frames are these:

1. Maximum flexibility because of infinite adjustment of roll settings and roll weighting.
2. Optimum yarn strength and evenness resulting from precise adjustments and apron control.
3. Easy operation due to absence of loose components and attachments such as saddles, levers, stirrups, etc.
4. Low maintenance costs due to simplicity of cleaning and long lubrication cycles.
5. All components are precision manufactured to close toierances.

This total changeover (from the roller beam up) utilizes 60° roll stands and provides straight-down spinning. Principal components are: (1) spring-weighted, free-carrier top arm; (2) ball bearing front, middle, and back top rolls; (3) a high stability top apron cradle; (4) bottom apron support and cradle control bar; (5) bottom apron tension device.



Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write supplier or use card on page 153; list N-116

Gun completely atomizes cleaning fluid instantly

A new device for removal of spots from woven, knitted, and non-woven fabrics at inspection tables reduces seconds by as much as 25 per cent. Known as the "Mistral B" Cleaning Gun, it is small, lightweight, easy to handle, and completely portable.

The cleaning fluid, which can be pumped from drums, cans, or the nylon cup provided on the gun, is completely atomized by the machine since a pressure of 120 psi is reached instantly when the inspector presses the button on the pistol-grip handle. Only atomized fluid reaches the fabric, and this instantly removes grease, oil, tar, resin, and drip spots, without leaving a ring.

The Compressor Corporation of America, P. O. Box 1934, Greenville, S. C.

Do you want more data? Write supplier or use card on page 153; list N-117

Size pump's parts can be replaced in the mill

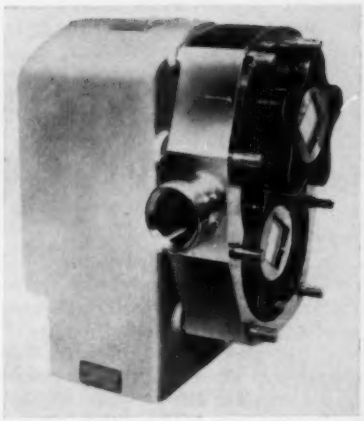
A stainless steel rotary pump for warp sizing offers exceptionally long life. When rebuilding is necessary, it does not have to be returned to the factory as parts are interchangeable and special tools are not required. Rotors are covered with a resilient material that actually absorbs the wear encountered with some abrasive sizings.

Manufactured in five sizes with capacities that range from 0 to 200 gpm, the pump is equipped with hardened gears that are welded to

the shaft in timing position and thus wear longer.

Product entering pump case is alternately drawn into the chambers between the lobes of the rotors and the inner circumference of the case. Interaction of the rotor lobes forms a continuous flexible seal between the inlet and the discharge. Liquid is carried from inlet to discharge without agitation or change in velocity. Grooves in case and cover hydraulically balance pressure on both sides of the rotors, virtually eliminating end thrust; they also introduce pressure from discharge side against shaft seals to prevent leakage under any operating pressure.

The Creamery Package Mfg. Co., 1243 W. Washington Blvd., Chicago 7, Ill.



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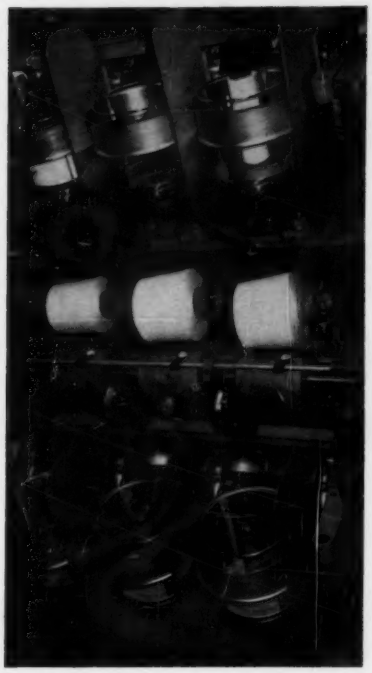


Electric boarding table dries socks uniformly

The new Paramount electric half-hose boarding table is designed especially for mills without adequate steam capacity or those located where low-cost electricity is available. Sealed tubular elements are cast integrally within aluminum forms for more efficient heat transfer and uniform drying. Forms may be quickly changed; they are individually wired.

Two sizes of the self-leveling table are available—the standard table with 24 forms (12 on each side) and the half table with 12 forms. Adjustable electrical control permits temperature regulation for all hosiery constructions.

Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago 3, Ill.

Do you want more data? Write supplier or use card on page 153; list N-119

2-for-1 twister winds yarn onto cones

Recently introduced in the United States was the German-made Barmag two-for-one twister for uptwisting all types of continuous filament yarns ranging in size from 60 to 300 denier. A significant feature is that the machine winds the yarn onto a cone (rather than a bobbin), thereby producing a take-up package ready for the customer.

Utex, Inc., Scranton 8, Pa.

Do you want more data? Write supplier or use card on page 153; list N-121

Very sensitive filling feeler improves fabric quality

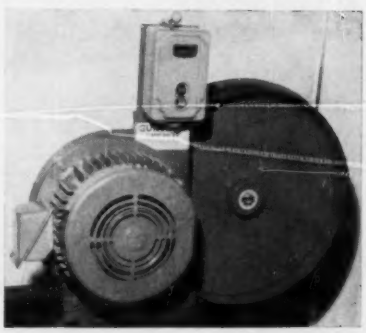
The new "Doff-Rite" filling feeler (Series 8400) for use on most Draper looms reduces premature transfer of full or partially full bobbins of filling, eliminates filling feeler tip marks, and prevents broken picks caused by filling run-out.

Featuring a spring-and-pivot design which provides greater resistance to side-slip and uniformly soft and steady contact on the filling, the feeler is housed in an all-nylon case that eliminates wear due to friction. A transparent and removable cap allows full visibility of parts and assures certain and easy settings.

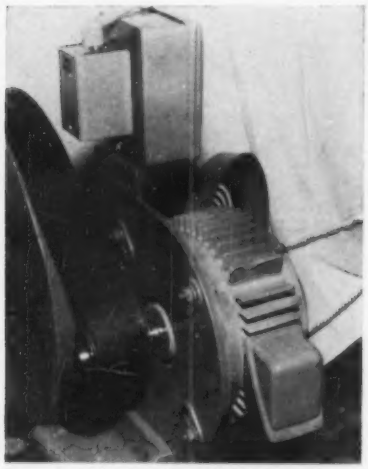
H. F. Livermore Corp., Allston Sta., Boston 34, Mass.

Do you want more data? Write supplier or use card on page 153; list N-120

Direct card drive uses little aisle space



Compactness, simplicity, smooth starting, uniform driving, easy stripping, and convenient reversing for



Rear view, showing direct-drive arrangement. Note motor reversing switch on box at top and stripper roll drive rope at right.

grinding are benefits of the Gunter Card Drive which utilizes a 1200 rpm, totally enclosed, non-ventilated flat 1½ hp motor equipped with a timing pulley and belt to directly drive the existing tight pulley on the card.

Stripping pulley on other end of motor shaft is near stripping roll and thus allows quick, safe, and easy stripping. Drive is easily reversed for grinding by a reversing drum switch mounted on back of control tower to avoid accidental reversing.

Installation is easy as drive mounts on existing holes in lower card frame.

Gunter and Cooke, Inc., 303 E. Trinity Ave., Durham, N. C.

Do you want more data? Write supplier or use card on page 153; list N-122

Spindle oils permit higher speeds with heavy packages

A new series of heavy-duty dispersant spindle oils, marketed under the tradename of "Vexilla" D, permits high production rates because of high film strength and lubricity. Full speed operation with heavy packages is one benefit. Power costs are cut with these oils because they reduce frictional drag in starting and running.

With a high viscosity index, the oils assure low starting torque and good vibration damping characteristics over a broad range of operating temperatures. By cushioning spindles against vibration they prevent hunting and logging.

The oils prevent spoilage of yarn. They resist foaming, thereby preventing oil atomization and fog-damage to adjacent spindles. A surfactant in the oils permits removal of oil stains from yarn by emulsification.

Both bolsters were operated under the same conditions, but conventional spindle oil was used in the one on the left and Vexilla D in the other. Note absence of corrosion or foreign matter on spherical insert seat of right bolster.

Spindle parts are protected against rust by these oils which hold contaminants in suspension, rather than permitting them to deposit on spindle blades or to settle in bolster cases, assuring clean and bright spindles and preventing sticking or unbalanced spindle operation.

Shell Oil Co., 50 W. 50th St., New York 20, N. Y.

Do you want more data? Write supplier or use card on page 153; list N-123

The Pneumaniez specially engineered by Nihon Spindle Mfg. Co., Ltd. is of the highest grade in pneumatic suction cleaning system and enjoys a high reputation for dependability. It is an indispensable piece of equipment employed for rationalization and automation purposes. The design of the Pneumaniez is based on the newest theories and results derived from years of research by skilled engineers, under the guidance of Dr. Niizu of Osaka University.

U.S. Representatives
Edward S. Rudnick
Room 404, Olympia Bldg.,
New Bedford, Mass., U.S.A.
Tel: WYman 6-5528
Cables: RUDNICK
NEWBEDFORD

NIHON SPINDLE MFG. CO., LTD.
Mengyo Kaikan Bldg.,
Bingo-machi, Higashi-ku, Osaka, Japan

Long-life drop box picker

Two features of a new plastic reversible drop box picker reduce downtime and increase life of the loom part—a self-lubricating barrel and high, wide shoulders.

One lubrication of the rod lasts up to one week. Oil is applied to a 1" long felt lubricator through two access holes in the top and bottom of picker barrel. Thus, a thin film of

Resistivity

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Abrasion

ABRASION	☐	☐	RESISTIVITY
BLENDING	☐	☐	SOILING
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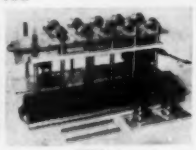
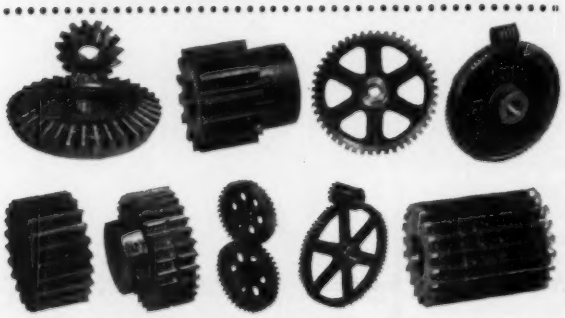
Soiling


Pilling

GEARS TO YOUR SPECIFICATIONS BY FERGUSON



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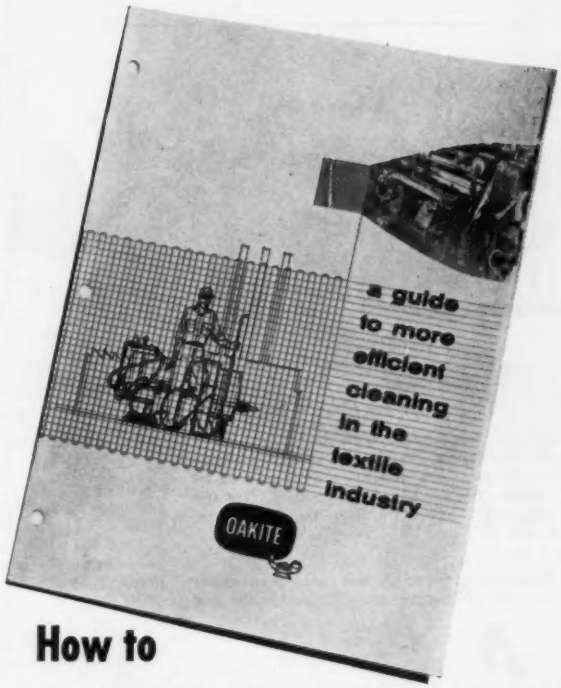

How to cut your costs on "repeat" clean-up jobs

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Oakite has worked with the textile industry for more than 50 years, and here is the result:

Here's a bulletin that covers every phase of mill maintenance ...from cleaning spinning frames to washing floors... to stripping and preventing rust.

In words and pictures, here are the facts on Oakite "job-matched" methods ... modern ways that slash through cleaning time and toil... give you top-notch cleaning efficiency.

For your FREE copy of this fact-filled bulletin, drop a post-card to Oakite Products, Inc., 26C Rector Street, New York 6, N. Y.

17 KEY JOBS

How to clean:

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knitting machines
floors
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Over Wrinkles in Cloth?
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Streamlined, it is precision-engineered, and accurate to within one-eighth of an inch. It ranges from 1 to 400 ypm.

Mecho's selvage finger is highly sensitive, yet very strong. It will prevent double edges turning on cloth. Mecho's adjustment lever changes the selvage finger tension (to accommodate any cloth from the lightest to heavy #8 duck) . . . *while in operation!*

Everyone engaged in wet processing needs a cloth guider, so make yours Mecho and forget your troubles.

Mecho Air Guiders can do your job; they guarantee you "Miles of Cloth without a Wrinkle." They've been standard equipment in hundreds of finishing plants for a quarter of a century! Their efficient and reliable simplicity makes them simply great! Why wait?

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374 State St., North Haven, Connecticut
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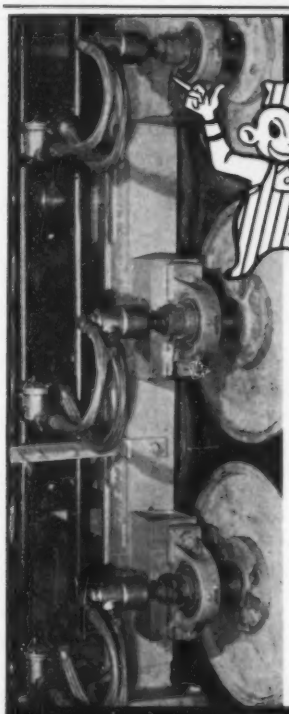
McSpadden & Scantland & Hunter P. O. Box 3635, Charlotte 3, N. C.



The ROTARY UNION* the trouble-free rotating seal

The Rotary Union automatically compensates for fluctuations in line pressure and always delivers the correct amount of heating or cooling gases or liquids to revolving equipment. The Rotary Union requires no adjustments or mechanical maintenance and thus saves on labor and down-time. Its floating action protects its optically flat sealing surfaces from stress and strain and assures extremely long leakproof service. Also shown is the Unitrap Model 70T which gives you faster warm up and efficiently removes condensate.

For long, accurate, and trouble-free service, standardize on the Rotary Union. Pipe sizes ¼" through 5". Write for Bulletins 700 and 800 today.

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oil is applied to the rod with every back and forth motion of the picker. High strength, fabric reinforced plastic bearings run smoothly and protect rod from overheating.

A greater impact area for the shocks and blows of the picker stick is provided by the high, wide shoulders.

The Gates Rubber Co., 999 S. Broadway, Denver 17, Colo.

Do you want more data? Write supplier or use card on page 153; list N-124

Gauge replaces spark test and card grinders "ear"

The Swiss-made Orion measuring device may be used in the card room to: (1) determine doffer or cylinder eccentricity with or without clothing; (2) determine parallel alignment of the grinding machine axis with cylinder or doffer axes and permit appropriate correction; (3) check the accuracy of cylinder and doffer clothing grinding; and (4) stimulate accurate work among grinding personnel. The device essentially allows parallelization to be checked by comparing degree of "levelness."

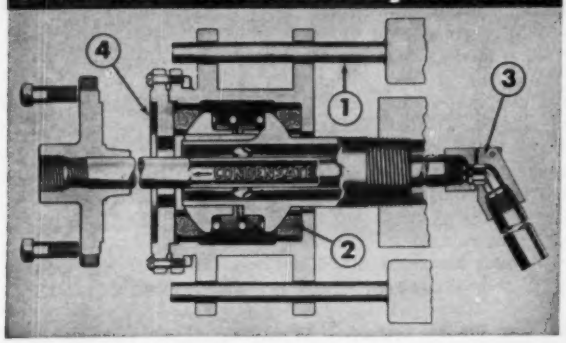
Benjamin Booth Co., Allegheny Ave. and Janney St., Philadelphia 34, Pa.

Do you want more data? Write supplier or use card on page 153; list N-125

Buffs top rolls under operating conditions

Top rolls of all types may be ground or buffed under the same conditions they operate with a German-made centerless grinder recently introduced in the United States. Thus, rolls ground on the machine are perfectly round and free of eccentricity, making it possible to pro-

For service on Dry Cans and 30" Slasher Cylinders



Type LJSP with Syphon Elbow

1. Support rods carry all the real weight. Sealing assembly "floats" freely inside. **2.** Seals without packing—needs no lubrication or adjusting. **3.** Syphon elbow replaces clumsy curved syphon pipe with two straight pipes, passes right through joint. **4.** Assembly plate holds parts in place when head is removed.

Johnson ROTARY PRESSURE Joints — First in the Textile Industry

Write for Catalog J-2002

Shows Johnson Joints for all needs, on dry cans, print cans, calenders, compressive shrinkage ranges, 5' and 7' cotton slashers, etc.

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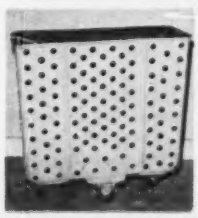
OXY COLD BAR • CURASTAT

● OXY COLD BAR • CURASTAT • OXY COLD BAR ●



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Special containers include dye box on casters, spinning doff boxes, conditioning boxes, dye buckets and batch containers in 15, 20, 25, 30, 40, 50 and 55 gallon sizes. Prices, literature upon request.

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Choose the ring finish that suits **YOUR** conditions

We not only provide you with the most modern ring designs, but also a variety of finishes:

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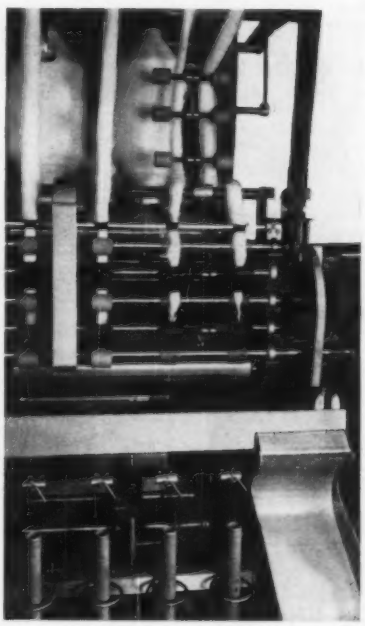
duce more uniform and stronger yarns. Simple operation, high production, low power consumption, and dust-free working conditions are other benefits to be derived by using the Peter Wolters Model 5M7 roll buffer.

Also available for use with this machine or any existing cot grinder is the Model WT 56 roll tester which allows rapid and accurate testing of the ground rolls for roundness, cylindricity, and eccentricity. A significant feature of this instrument is the fact that the roll being tested is rotated mechanically rather than by hand.

Roy International, Inc., 801 Southbridge St., Worcester, Mass.

Do you want more data? Write supplier or use card on page 153; list N-126

Spins 5s to 100s yarns from sliver or roving



With a vertical five-roll drafting system now available on new 24-inch-wide spinning frames or as a changeover for existing frames, it is possible to spin yarns as coarse as 2s and as fine as 100s from sliver or roving. The wide draft range (10-650) is a result of the simplicity of the draft gearing. It is necessary to change only one draft gear in most instances and a maximum of two for extreme draft conditions.

Known as the VY-5, the system is designed to spin all types of fibers from 15/16" to 6" long. It is especially useful for novelty spinning where it becomes necessary to make quick changes in draft, style, and number.

Bottom rolls are of the spiral fluted type to prevent patterns developing, and self-aligning antifriction bearings are utilized on them. Top rolls are fitted with double antifriction bearings to assure proper alignment.

F. A. Young Machine Co., Inc., Gastonia, N. C.

Do you want more data? Write supplier or use card on page 153; list N-127

"Band-Aid"-like mounting pad speeds machinery installation

Quicker installation of textile machinery and immediate operation of it are advantages of a new machinery mounting material with factory-applied pressure-sensitive cement. Simply tear off the protective backing on Unisorb Pre-Coat and the pad will stick to the machine and the floor to hold it in place without bolts or screws.

Unisorb Div., The Felters Co., 210 South St., Boston 11, Mass.

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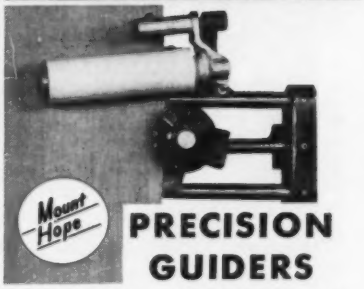
MORE THAN WATCHDOGS of Misalignment . . .



Mount Hope

PRECISION GUIDERS

Like watchdogs — Mount Hope Precision Guiders instantly detect misalignments — and automatically correct these deflections, control lateral movement of the cloth.

As material begins to move out of alignment, it is "sensed" by a grooved and fluted selvage wheel which automatically readjusts the angle of a pair of nip rolls on each selvage. This ever-changing angle compensation applies just the right pull to keep the finest fabrics or the sturdiest materials in alignment.

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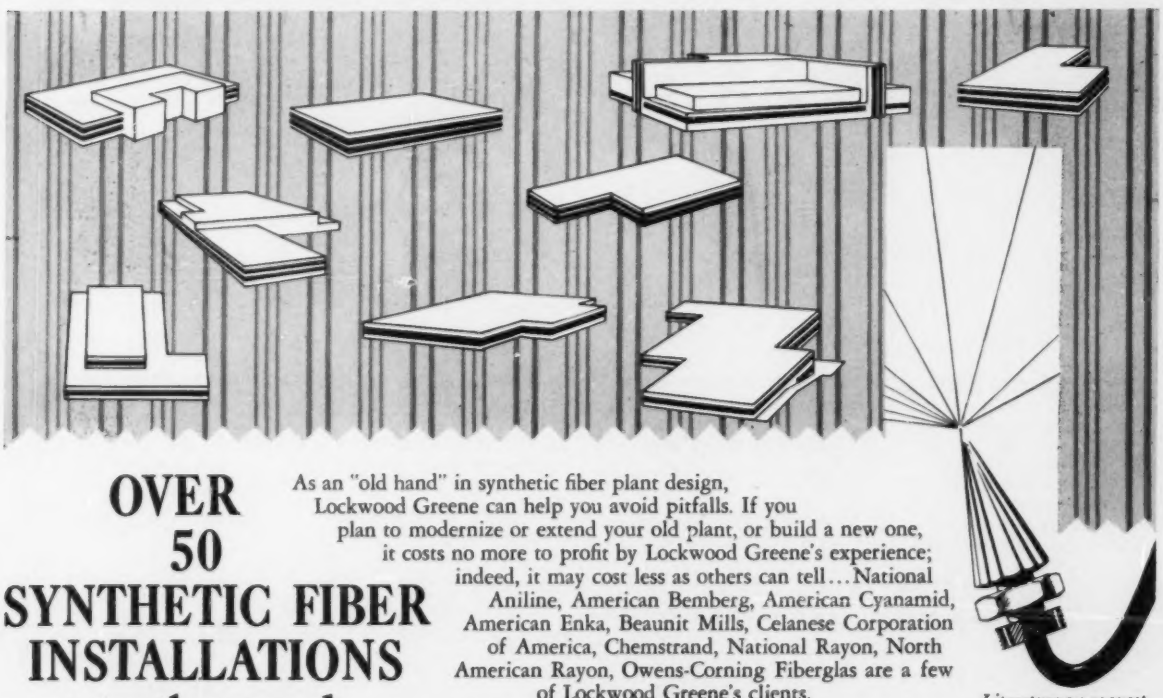

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Literature on request.

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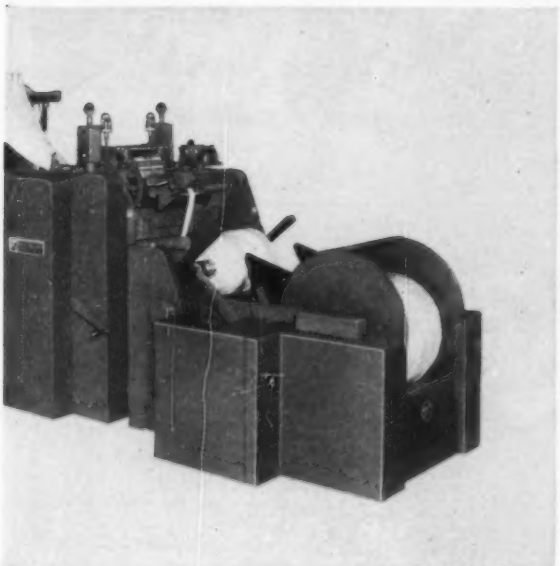
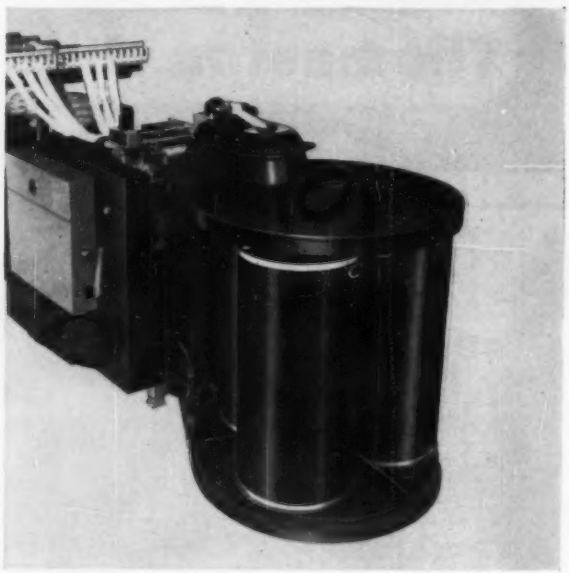
With the additions of the Automatic Can and Ball Doffers, Warner & Swasey now offers the most complete line of pin controlled drawing equipment; and increased quality, production, operator and machine efficiencies are but a few of the benefits you can expect through the addition of these units.

Applicable to single head, single delivery machines, the units have been designed in accordance with Warner & Swasey engineering standards with special stress on unit simplicity and low maintenance. The units require very little additional floor space.



AUTOMATIC BALL DOFFER—Winds, doffs, and resumes winding a new ball without operator assistance. The entire doffing cycle takes less than 12 seconds. The unit delivers up to 12 oz./5 yds. on a ball with a maximum size of 18" x 24" that may weigh as much as 50 pounds.

The ball doffer is designed to provide fast, efficient production in a variety of applications, and is particularly suited for pre-combed and top making applications. It could also be set up to deliver finished balls to an in-plant transfer system.



AUTOMATIC CAN DOFFER—Completely automates the delivery on the single head intersecting draw frame. The unit accommodates three cans 18" or 20" in diameter, up to 42" high while doffing is accomplished "on the fly". It will handle up to 12 oz./5 yds., and fits into any production line where pin controlled drawing is used.

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FREE BOOKLETS

12-1 GOOD GEARS—Brochure describes up-to-date manufacturing and testing equipment necessary to make good gears. Saco-Lowell, Replacement Parts Division, Greenville, S. C.

12-2 CASH FOR GROWTH—Booklet tells how to get the necessary cash to make your business grow. Textile Banking Company, 55 Madison Avenue, New York 10, New York.

12-3 DYEING MACHINES—Booklet describes complete line of dyeing and bleaching apparatus made by Vald Henriksen. Edda International Corporation, 468 Fourth Avenue, New York 16, N. Y.

12-4 HAND TACHOMETER—Booklet describes Triple-tach, the three in one hand tachometer, with plus or minus 1% of full scale deflection. Metron Instrument Company, 432 Lincoln Street, Denver 3, Colorado.

12-5 MOTOR MAINTENANCE—Manual tells how to prevent motor trouble through proper installation and maintenance. Allis-Chalmers Manufacturing Company, Industries Group, Milwaukee 1, Wisconsin.

12-6 BRINEMAKER—Booklet describes design and operation of device which creates exceedingly high brine make-up rates. Morton Salt Company, Industrial Division, 110 North Wacker Drive, Chicago 6, Illinois.

12-7 PALLETAINERS—Brochure describes broad range of standardized palletainers to meet every conceivable textile requirement. Union Steel Products Company, 600 North Berrien St., Albion, Michigan.

12-8 POWER TRANSMISSION—Catalog describes and illustrates complete line of mechanical power transmission and equipment. T. B. Wood's Sons Company, Chambersburg, Pennsylvania.

12-9 METALLIC, CERAMIC COATINGS—Booklet describes process for flying metallic and ceramic coatings under high temperature and high speed. Plasma Bond Division, Thermal Dynamics Corporation, Lebanon, New Hampshire.

12-10 TESTING ROLLS—Bulletin describes procedure for taking nip and crown impressions with patented aluminum foil known as "Sto-Foil." Stowe-Woodward, Inc., 181 Oak Street, Newton Upper Falls, Massachusetts.

12-11 PACKAGE, UNITIZE AND SHIP—Newly revised booklet is the 20th edition of the basic reference guide to strapping methods and tools. Signode Steel Strapping Company, 2600 North Western Ave., Chicago 47, Illinois.

12-12 TEXTILE CASTERS—Eight series of textile casters are featured in folder. Faultless Caster Corporation, Dept. PR-247, Evansville 7, Indiana.

12-13 KNIT OUTERWEAR—Bulletin recommends the correct machine operation in the manufacture of knit outerwear. Request bulletin No. 256, Union Special Machine Company, 400 North Franklin St., Chicago 10, Illinois.

12-14 TEXTILE PRODUCTS—Brochure describes complete range of textile products manufactured by Armstrong including tables for selection by function and type. Covers rolls, cots, aprons, etc. Armstrong Cork Company, Industrial Division, Lancaster, Pa.

12-15 RECORDERS—Booklet describes five recorder models for use in cost and quality control in textiles. Service Recorder Co., 1013 Rockwell Avenue, Cleveland 14, Ohio.

12-16 WEFT STRAIGHTENER—Folder provides technical information on various types of weft straightening equipment. Mount Hope Machine Company, 15 Fifth Street, Taunton, Mass.

12-17 YARN INSPECTOR—Booklet describes fully transistorized yarn inspector. Foster Machine Company, Electronic Sales Div., Westfield, Massachusetts.

12-18—POWER DISTRIBUTION—Booklet tells how to plan for safe, expandable, flexible, reliable and economical power distribution. General Electric Company, Schenectady, New York.

12-19 OIL-LESS DRAFTING CHANGEOVER—Booklet describes new oil-less drafting changeover for roving and spinning, including complete picture series. Saco-Lowell Shops, Replacement Parts Div., Greenville, South Carolina.

12-20 FLEXIBLE CUSHION COUPLINGS — Booklet covers two new types of flexible cushion couplings, one for high speed and the other for flywheels. Request bulletin 901, Dodge Manufacturing Corp., Mishawaka, Indiana.

12-21 AUTOMATIC DOFFING—Booklet describes automatic doffing machine which can effect huge savings in spinning costs. Willcox & Gibbs Sewing Machine Company, 214 West 39th Street, New York, New York.

12-22 ROTARY CUTTER-WINDER—Booklet describes completely automatic machine which operates in conjunction with seam detector and yardage meter. H. W. Butterworth & Sons Company, Bethayres, Pennsylvania.

BOOKLETS

raw stock to roving

T-101 LUMMUS PEPPER - SHAKER OPENER. Gives complete details and photographs. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-102 STATIC ELIMINATION. How to eliminate static safely and inexpensively. Simco Co., 920 Walnut St., Lansdale, Pa.

T-103 CARD GRINDING INFORMATION. Care and operation of cards. B. S. Roy & Son Co., Worcester, Mass.

T-105 VERSA - MATIC DRAWING FRAME. Describes drafting elements, quality of sliver, roving and yarn possible. Saco-Lowell Shops, Textile Machinery Div., Easley, S. C.

T-106 SARGENT OPENER. Describes opener with rotary evener and stripper. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-107 FEATHERTOUCH DRAFTING. How to get "highest production per frame at lowest cost." Ideal Industries, Inc., Bessemer City, N. C.

T-111 MAGNETIC IDEAS. Booklet shows uses of permanent magnetic separation equipment in opening room as well as throughout mill. Removes tramp iron, prevents fires. Eriez Mfg. Co., Erie, Pa.

T-112 ADVANTAGES OF ALDRICH PICKERS. Good technical text, comprehensive pictures. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

T-113 NEW CONDENSER TAPE. Describes Supr-O-Tape, an impregnated fabric condenser tape. Benjamin Booth Co., Allegheny Ave. & Janney St., Philadelphia 34, Pa.

T-119 FIBER METER. Automatic weighing and blending assures quality, holds variation to 1%. James Hunter, Inc., P. O. Box 298, Mauldin, S. C.

T-120 PIN DRAFTERS. Textile job report No. 21 tells how Warner & Swasey Pin Drafters help modify jute systems for carpet yarns. Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

T-121 UNIVERSAL CARD COILER. Literature describes both head and base swivel for adjustment. Includes data on 90-day free trial. McDonough Power Equipment, Inc., McDonough, Ga.

T-122 RECONDITION OPENING & CLEANING. Bulletin gives whys and wherefores of reconditioning your opening and cleaning lines. Special attention given to each machine with suggestions as to parts replacement. Saco-Lowell Shops, Replacement Parts Div., Box 327, Greenville, S. C.

T-123 COILER CONVERSIONS. Full facts on low initial cost conversion to larger coiler cans. Lists advantages, has complete description. Southern States Equipment Corp., Hampton, Ga.

T-124 CARD DRIVE. Bulletin 301-a describes simple, safe, efficient individual card drive. Southern States Equipment Corp., Hampton, Ga.

T-132 PROCTOR SUPER PICKER. Data sheet gives details of the Proctor Super Picker for use on slabs of baled cotton, or wool and synthetic blends in layers up to 12" thick. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-133 ANTI-STATIC AGENT. Data sheet lists basic characteristics of liquid anti-static agent which eliminates processing difficulties with fibers due to static electricity. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

yarn and warp making

T-201 PRODUCTS FOR SPINNING AND WEAVING. Complete line, applications, advantages shown. Dayco Corp., Textile Div., Dayton, Ohio.

T-202 NEW BOBBIN MANUAL. Complete bobbin guide. Lestershire Spool Division, National Vulcanized Fibre Co., Wilmington 99, Delaware.

T-203 SPINDLE OIL. "Gulfspin" insures against excessive wear and eliminates spindle wobble. Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa.

T-205 HIGH SPEED AUTOMATIC QUILLER. Lists advantages and dimensions of "Autocopser." Terrell Machine Co., Inc., P. O. Box 928, Charlotte, N. C.

T-208 PACKAGED SPINNING MODERNIZATION. Details on Collecto-Vac, Open-Aire Creels, Cross-Jet Cleaner, Air Conditioning. Bahnson Company, Winston-Salem, N. C.

T-209 SECTIONAL WARPER. Describes full width and sectional warpers for knitting, weaving. Robert Reiner, Inc., Weehawken, New Jersey.

T-210 CONICAL RINGS AND FLYERS. Complete details and specifications. Herr Manufacturing Co., Inc., 318 Franklin St., Buffalo 2, New York.

T-211 PRECISE WINDING MACHINE. For winding pineapple or straight cones and tubes of synthetics. Foster Machine Co., Westfield, Mass.

T-212 AUTOMATIC CLEANING EQUIPMENT. Working details and advantages of the Tri-Rail Cleaner. American MonoRail Co., 111 East 200th St., Cleveland 17, Ohio.

T-216 SPINNING FRAME CONVERSIONS. Big-package, new-frame results at half the cost. Meadows Mfg. Co., P. O. Box 10876, Station A, Atlanta, Ga.

T-217 COLLECTO-VAC. New development collects lint, fly and broken ends. The Bahnson Company, Winston-Salem, N. C.

T-219 SPINNING AND TWISTER RINGS. Complete details, pictures, price list. Whitinsville Spinning Ring Co., Whitinsville, Mass.

T-222 SUCTION CLEANING SYSTEM. Details on new Collector Unit Model C-4. Pneumafil Corp., Charlotte 8, N. C.

T-223 FACTS ABOUT YOUR FLYERS AND SPINDLES. Advantages of smooth flyer and spindle operation. Ideal Machine Shops, Bessemer City, N. C.

T-225 LAPLESS ENDLESS SPINNER. Full information available. Ton-Tex Corporation, 31 Columbus Ave., Englewood, N. J.

T-227 SPINDLE OILING MACHINE. Features and advantages noted. Wicaco Machine Corp., 4800 Stenton Ave., Wayne Junction, Philadelphia 44, Pa.

T-228 HANDY SPINNING REFERENCE. Shows traveler speeds, sizes of ring flanges. Saco-Lowell Shops, Parts Replacement Division, P. O. Box 327, Greenville, South Carolina.

T-229 UNIRAIL UPTWISTER. Higher yarn quality and better packages at faster speeds. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-230 PRECISION TEXTILE WINDING. Tensions and density control for winding rubber cones. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-231 CONE WINDER. Describes Model 103 winder, including applications. Foster Machine Co., Westfield, Mass.

T-232 SHORT CUT TO STAPLE FIBER SPINNING. Ten steps in operation of the Tow Stapler. Turbo Machine Co., Lansdale, Pa.

T-233 WEAVER'S KNOTTER. Instructions as to use, description. A. B. Carter, Inc., Gastonia, N. C.

T-234 TEXTILE ROLL COVERINGS. Describes complete line as well as other mill supplies. Armstrong Cork Co., Industrial Div., Lancaster, Pa.

T-239 LARGE PACKAGE TWISTER. Information on new anti-friction Jumbo Twister which carries a 14" bobbin with a 12" build. Meadows Mfg. Co., P. O. Box 10876, Sta. A, Atlanta, Ga.

T-241 PACEMAKER TWISTERS. Folder gives details on high production, outlines notable features. Whitin Machine Works, Whitinsville, Mass.

T-242 RING SPINNING FRAME. Folder presents description, illustrations and specifications of up-to-date Simplex ring spinning frames. Davis & Furber Machine Co., North Andover, Mass.

T-243 ANTI-FRICTION TWISTER BEARINGS. Find out how bearings helped make The Meadows Twister almost friction-free. Fafnir Bearing Company, New Britain, Conn.

T-246 BETTER BEAMS. Information on three ways to make better beams. Kidde Textile Machinery Corp., Farrand St., Bloomfield, N. J.

T-249 VARI-SPEED MOTOR PULLEY. Describes variable speed control through use of simplified three-major-part disc-assemblies with only one lubrication point. Reeves Pulley Co., Reliance Electric & Engineering Co., Columbus, Ind.

T-250 SPINNING MODERNIZATION. Booklet shows how lower costs and improved quality are obtained by spinning modernization. Roberts Company, Sanford, N. C.

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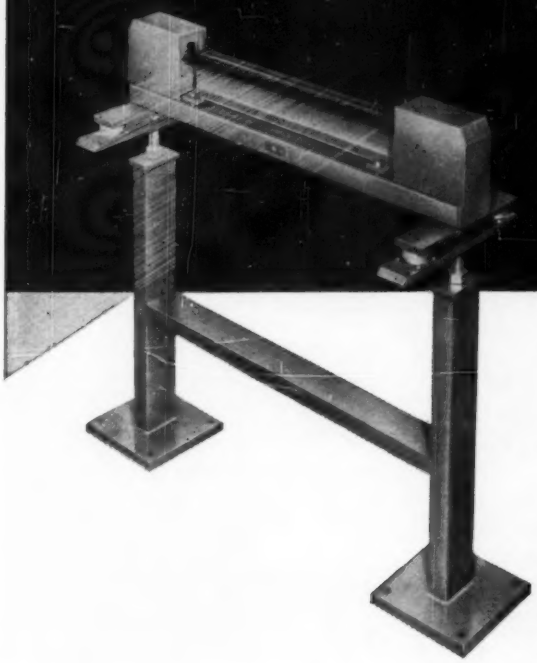

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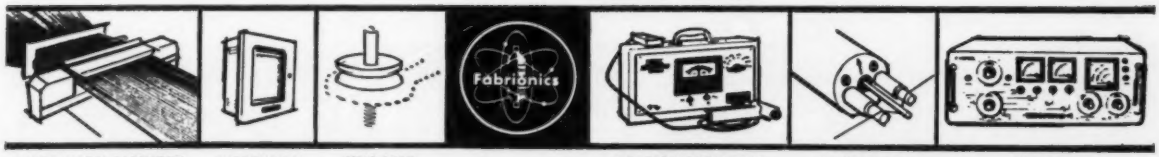

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BOOKLETS

T-255 **NEW BOBBIN HOLDER.** Details on streamlined, positive latching bobbin holder. Whitehead Die Casting Co., 1140 Zonolite Rd., Atlanta, Ga.

T-256 **HUMIDIFIER PROTECTION** — Brochure tells how "Rustex" can stop rust and corrosion and prevent discolored water in your humidifying system. Odorless and completely harmless to personnel, or goods. Anderson Chemical Co., Inc., Box 1424, Macon, Georgia.

T-257 **COMETSA SPINDLES.** Bulletin gives details of high-precision, vibration free Cometsa spindles. Edward B. Rock, 127 E. 69th Street, New York 21, New York.

slashing—weaving—tufting

T-301 **COUNTING AND MEASURING DEVICES.** Wide range of counting devices for all types of textile machinery. Veeder-Root, Inc., Hartford, Conn.

T-302 **LOOM SUPPLIES.** Describes complete line. E. H. Jacobs Mfg. Co., P. O. Box 3096, Charlotte, N. C.

T-304 **LOOM PRODUCTION CHARTS.** Celluloid card shows yards per loom per week. Ralph E. Loper Co., Greenville, S. C.

T-306 **THE STORY OF STARCHES.** History and information on manufacture and use of starches. National Starch & Chemical Corp., 750 Third Ave., New York 17, N. Y.

T-308 **STEEL WARP BEAMS.** Beams for both broadloom and narrow fabrics. Milton Machine Works, Inc., Milton, Pa.

T-309 **PENFORD GUMS IN TEXTILES.** Describes their excellent properties for warp sizing spun yarns. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-312 **AIR SLASHER DRYER.** Shows construction and operating details. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

T-313 **BUTT-TACKING SEWING MACHINE.** Describes operation, installation of single thread butt-tacking sewing machine. The Merrow Machine Co., 38 Laurel St., Hartford, Conn.

T-314 **LOOM REED BOOKLET.** Describes in detail a variety of reeds. Steel Heddle Mfg. Co., 2100 West Allegheny Ave., Philadelphia 32, Pa.

T-315 **COCKER EQUIPMENT.** Information on warp sizer, beam warper, creels, tensions, back-winders, etc. Cocker Machine & Foundry Co., Gastonia, N. C.

T-318 **FORMULAS FOR SLASHING ARNEL.** Includes also information on warping, weaving and quilling. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte 1, N. C.

T-319 **ECLIPSE STARCHES FOR TEXTILES.** Data sheet describes use of thin-boiling starches in the textile industry, with particular emphasis on warp sizing. Physical and chemical data included. A. E. Staley Mfg. Co., Decatur, Ill.

T-321 **COCKER SLASHERS.** Complete specifications and advantages, including allied equipment. Cocker Machine & Foundry Co., Gastonia, N. C.

T-322 **MOUNTS FOR LOOMS.** Vinyl mount eliminates need for bolts or paste. Clark, Cutler, McDermott Co., 106 W. Central St., Franklin, Mass.

T-323 **UNIFIL LOOM WINDER.** Describes new concept of filling preparation which needs no quilling area. Leesona Corp., P. O. Box 1605, Providence, R. I.

T-324 **ALIGNING LAYS.** Setting instructions for step-by-step aligning. Draper Corporation, Hopedale, Mass.

T-325 **TRAVELING LOOM CLEANER.** Advantages of the new Oscillaire loom cleaner. Parks-Cramer Co., Fitchburg, Mass.

T-326 **DRAPER REPAIR PARTS CATALOG.** Contains illustrations covering all mechanisms and construction with complete listings. Draper Corporation, Hopedale, Mass.

T-327 **BALING PRESSES.** Describes complete line of motor-driven and hydraulic baling presses. Logemann Brothers Co., 3150 West Burleigh St., Milwaukee, Wis.

T-328 **TEXTILE MACHINERY PARTS CATALOG.** Describes complete line of Dayco and Thorobred textile parts. Dayco Corp., Dayton, Ohio.

T-329 **COUNTING DEVICES.** Describes complete line of counters for every application. Trumeter Company, 38 W. 32nd St., New York 1, New York.

T-331 **STATIC BARS.** Humorously illustrates how static can be overcome. The Simco Co., 920 Walnut St., Lansdale, Pa.

T-332 **CARE OF DRAPER SHUTTLES.** Describes how longer, trouble-free service may be obtained. Draper Corporation, Hopedale, Mass.

T-336 **ONE-PIECE SIZING AGENT.** Houghto-Size CW provides low kettle cost, results in free-running warp of high breaking strength, increasing weaving efficiency. E. F. Houghton & Co., 303 West Lehigh Ave., Philadelphia 33, Pa.

T-346 **FACTS ON NON-WOVENS.** Fact file on non-wovens tells of new machinery, new methods of handling fibers, new bonding agents, etc. Curlator Corporation, Textile Div., E. Rochester, N. Y.

T-347 **NEW DRYING SYSTEM.** Describes high capacity, custom engineered drying equipment for tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

T-351 **AUTOMATIC STOP MOTION.** Complete information available on automatic stop motion for Titan warp tying-in machine. Edda International Corp., 468 Fourth Ave., New York 16, N. Y.

T-353 **BACKING FOR TUFTEDS.** How to get your tufting necessities with one telephone call. Fulton Cotton Mills, P. O. Box 1726, Atlanta 1, Ga.

T-355 **NON-WOVEN FABRICS.** Booklet gives outline of nature and history of non-woven and the manufacturing techniques of today. Booklet 56-219A, Chemical Div., Goodyear Tire & Rubber Co., Akron 16, Ohio.

T-358 **LOOM SUPPLIES.** Information on rod lubricant and applicator, sponge leather bunter, picker. Garland Mfg. Co., 54 Water St., Saco, Me.

T-362 **SIZE THAT SATISFIES.** Information on getting the correct size package for your mill. Also on Bingham line of slasher rolls. Stodghill & Co., 716 Ponce de Leon Place, Atlanta, Georgia.

T-363 **RUBBER COVERED SLASHER ROLLS.** Handy booklet tells how to get longer life and better performance from rubber covered rolls. Includes data on handling, storing and grinding. Stowe-Woodward, Inc., Dept. C., 181 Oak St., Newton Upper Falls 64, Mass.

knitting

T-401 **SINGLEHEAD FULL - FASHIONED MACHINE.** Literature on request from the Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-403 **RASCHEL KNITTER.** Describes new Raschel-type knitting machine. Kidde Textile Machinery Corp., Inc., Farrand St., Bloomfield, N. J.

T-406 **NEEDLE OIL DOES NOT STAIN.** Details on "Gulftex 39" developed for knitting mills. Gulf Oil Corp., Gross & PRR, Pittsburg 30, Pa.

T-407 **KNITTING MACHINES.** Information on Wildman "TFS" 30" single section F-F machines and "AL" 30" diameter 32-feed "single purpose" circular interlock machine (rib type) Wildman-Jacquard Div., Draper Corp., Hopedale, Mass.

T-409 **KNIT GOODS FINISHING MACHINERY.** Data on calenders, shrinkers, curers, extractors, steamers. Tubular Textile Machinery Corp., 33-61 54th St., Woodside, N. Y.

T-410 **"READING" TYPE 60 F-F KNITTING MACHINE.** Information about the new "Reading" Type 60, 38-section automatic full-fashioned hosiery knitting machine. Write Textile Machine Works, Reading, Pa.

wet processing

T-500 **WEBB GUIDE SYSTEMS.** Folio No. EG-84 describes webb guide systems for cloth applications. G.P.E. CONTROLS, INC 240 E. Ontario St. Chicago 11, Ill.

T-501 **TUBES FOR PACKAGE DYEING.** Describes Dytex tubes for one-time use. Sonoco Products Co., Hartsville, S. C.

T-502 **FINISHING MACHINERY.** Text and photographs of complete line of machinery. Marshall and Williams Corp., 46 Baker St., Providence, R. I.

T-503 **WATER ANALYSIS.** Includes tables, conversion factors, indicators, standard solutions. Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-504 **UREA FORMALDEHYDE.** Literature on urea formaldehyde or U.F. concentrate-85. Dept. CUFI-29-1, Nitrogen Div., Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-506 **CATIONIC SURFACE ACTIVE AGENT.** Describes Uversoft "D." Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

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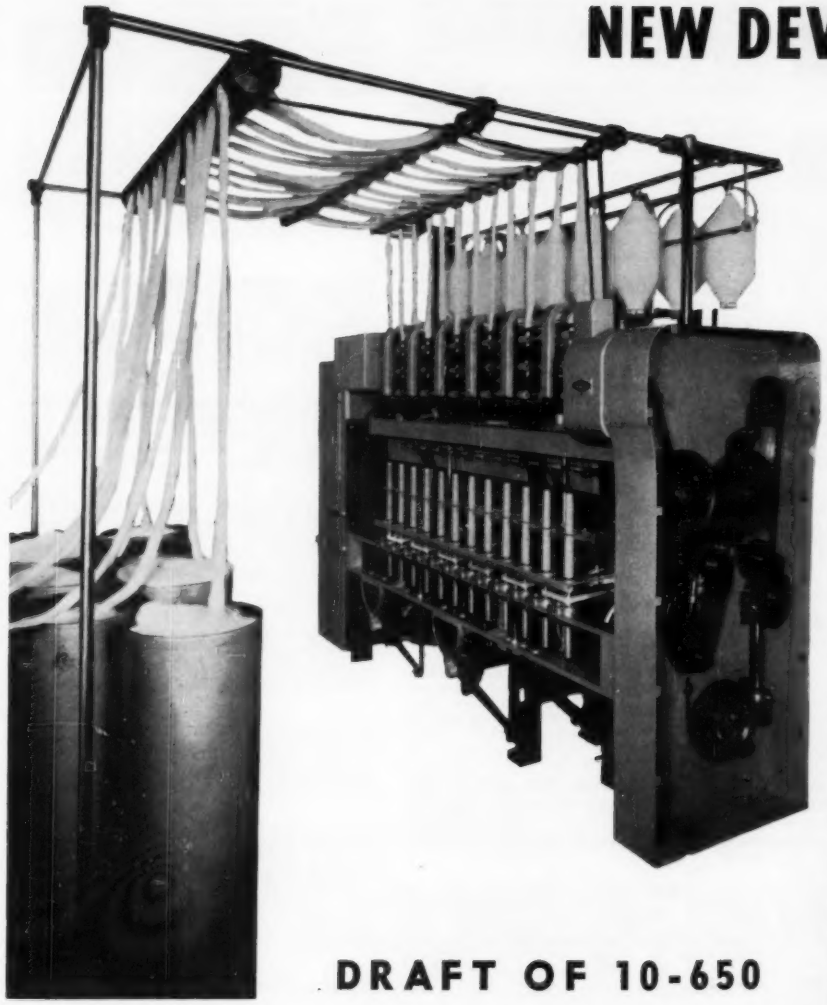
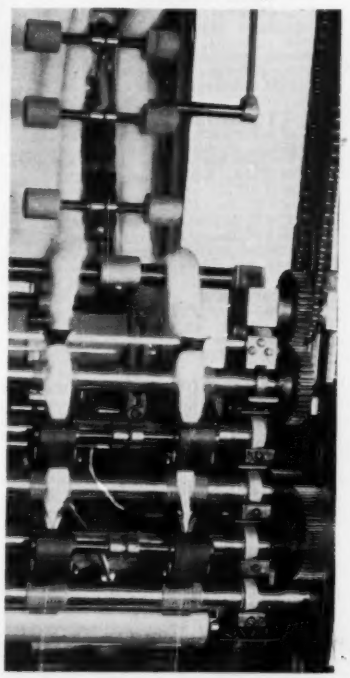


Note: Spiral Fluted Rolls and Double Bearings



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BOOKLETS

T-508 PEROXIDE BLEACHING SYSTEM. Illustrates and describes this continuous system. E. I. du Pont de Nemours & Co., Electrochemical Dept., Wilmington, Del.

T-510 TEXTILE CHEMICALS. Describes leading products for wet processors. Royce Chemical Co., Carlton Hill, N. J.

T-512 DEPUMA. Describes odorless, viscous, non-evaporating emulsion for anti-foam. Koppers Co., Inc., Chemicals & Dyestuffs Div., Porter Bldg., Pittsburgh 19, Pa.

T-513 CATALYST AC-6. Tells how curing efficiency may be stepped up as much as 25%. Monsanto Chemical Co., Plastic Division, Springfield 2, Mass.

T-514 SODA ASH BULLETIN. Contains useful data covering this subject. Solvay Sales Division Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-516 ALUMINUM CHELATE PEA-1. Technical data sheet tells how aluminum Chelate PEA-1 may be used with advantage in many applications where aluminum is proplate is unsatisfactory. Harshaw Chemical Co., 1945 East 97th St., Cleveland 6, Ohio.

T-517 CHEMICAL CATALOG. Lists products with chemical composition, properties and applications. Antara Chemicals Div., General Aniline & Film Corp., 435 Hudson St., New York 14, New York.

T-519 HYDRAULIC POWER UNITS. Describes unit for operating hydraulic textile machines. B. F. Perkins & Son, Inc., Holyoke, Mass.

T-522 CUT WATER TREATMENT COSTS. Describes the control of scale, slime, algae and corrosion. Oakite Products, Inc., 126C Rector St., New York 6, New York.

T-526 PRODUCTS FOR TEXTILE IMPROVEMENT. Describes products and services designed to provide better fabrics. B. F. Goodrich Chemical Co., 3135 Euclid Ave., Cleveland 15, Ohio.

T-527 SODIUM HYDROSULFITE. Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

T-528 ETHANOLAMINES. Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical Corp., 40 Rector St., New York 6, New York.

T-531 ROTARY DYEING MACHINE. For use in dyeing hosiery, hats, gloves, socks, etc. Turbo Machine Co., Lansdale, Pa.

T-534 DYEING AND FINISHING MACHINERY. Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

T-535 DYEING, BLEACHING AND DRYING EQUIPMENT. Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

T-536 NAPHTHOL RATIOS SLIDE CHART. Quickly and accurately enables operators to determine Naphthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

T-540 PENFORD FINISHING GUMS. Complete data, including physical properties. Penick & Ford Ltd., Inc., 750 Third Ave., New York 17, New York.

T-541 REGENERATION OF ZEOLITE WATER SOFTENERS. Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

T-542 DYEING SYNTHETIC FIBERS. Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-543 INDUSTRIAL BRUSHES. Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

T-544 WASTE HEAT RECOVERY. Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

T-545 WASHERS FOR SCOURING, BLEACHING, ACIDIFYING. Describes high capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

T-546 NAPHTHOL FOR LIGHTFAST BROWNS. Booklet describes new, straight, non-substantive naphthol, Naphthol As-BN, for the continuous naphtholation of cotton and rayon piece goods in the dyeing of economical, fast-to-light browns. General Dyestuff Co., 435 Hudson St., New York 14, New York.

T-547 SOFTENER LUBRICANT, NAPPING AID. Technical information available on softener, lubricant and napping aid for natural and synthetic fibers, yarns and fabrics. Nopco Chemical Co., Harrison, N. J.

T-548 HANDBOOK ON METHOCEL. Gives technical information and use data on family of methylecellulose ethers called Methocel. Organic Chemicals Sales, The Dow Chemical Co., Midland, Mich.

T-550 POLYVINYL ACETATE EMULSION. Bulletin contains a description of Celanese emulsions and cites advantages of Celanese polyvinyl acetate emulsions in textile finishing. Celanese Chemical Co., 180 Madison Ave., New York 16, N. Y.

T-554 INSTRUMENT CATALOG. Complete information on industrial instrument accessories and supplies. Includes specifications, parts numbers and prices. Catalog 500, Foxboro Co., Foxboro, Mass.

T-556 HUNTER DYEING EQUIPMENT. Describes fully with diagrams Hunter Model A Dye Becks, Hunter No/Lap Reels, Model S Dye Kettles, Open Width Dye Kettles, Sample Dye Kettles. James Hunter Machine Co., North Adams, Mass.

T-557 HIGH ACTIVITY CATALYST. Technical bulletin describes new catalyst AC-6 which provides increased activity, excellent bath life, minimum odor formation, etc. Monsanto Chemical Co., Plastics Div., Springfield, Mass.

T-558 CATIONIC DYE LEVELER. Bulletin TX-34 gives new information on dye leveler for acid colors on nylon tricot and wool through use of Nopco 1425-B. Nopco Chemical Co., Textile Chemicals Div., Harrison, N. J.

T-559 FLOW CONTROL Complete information on largest selection of values to handle flow control requirements. William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

T-561 PUMP POURABLE PASTES. Bulletin tells how Moyno pumps can pump any textile liquid that can be forced through a pipe, even if highly viscous or corrosive. Robbins & Myers Inc., Springfield, Ohio.

T-563 POLYETHYLENE FINISHING AGENT. Booklet contains information needed to adopt Emulsifiable A-C polyethylene as a finishing agent to any particular process. Semet-Solvay Petrochemical Div., Allied Chemical Corp., 5th Floor T, Rector Street, New York 6, N. Y.

T-564 HYDROGEN PEROXIDE BLEACHING. Booklet discusses advantages, operating details and savings in chemical costs of Activated Hydrogen Peroxide Bleaching Process for Cotton Solvay Process Div., Allied Chemical Corp., 61 Broadway, New York 6, N. Y.

T-566 ETHYLEX GUMS. Brochure describes properties of hydroxy ethyl ether derivatives of corn starch. Applications of these noncongealing gums in warp sizing and finishing covered. A. E. Staley Mfg. Co., Box 151 Decatur, Ill.

T-570 CARPET DRYERS. Details, pictures, drawings on driven roll, conveyor, and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston Dorchester, Mass.

T-572 DYEING MACHINERY FOR EVERY PURPOSE. Illustrated literature available on complete line of automatically controlled machinery. Gaston County Dyeing Machine Co., Stanley, N. C.

T-576 YARN PREPARATION. Describes products for yarn preparation, printing, finishing. Polymer Industries, Springdale, Conn.

T-577 STAINLESS DRY CANS. Information on stainless steel, 75 psi, reverse dished, head dry cans. Can be furnished Teflon-coated if desired. Sims Metal Works, West Point, Ga.

T-579 AUTOMATIC GUIDING EQUIPMENT. Catalog shows various types of automatic guiding equipment for accurate cloth guiding. Fife Mfg. Co., Inc., P. O. Box 9815, Oklahoma City, Okla.

fibers and yarns

T-601 FORTISAN-36, NEW TEXTILE FIBER. Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

T-602 CAPROLAN NYLON HEAVY YARNS. Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

T-603 RAYON—MILE BY MILE. Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

T-604 THE CHEMSTRAND NYLON STORY. Describes the birth and growth of Chemstrand Nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

T-605 COLOR-FAST FIBERS. Further information on "Coloray." Courtauld's solution dyed rayon staple which is a contribution to color fastness in fabrics. Courtaulds (Alabama) Inc., 600 Fifth Ave., New York 20, N. Y.

T-608 TASLAN TEXTURED YARNS. Technical information on dyeing and finishing of new fabrics made with Taslan. E. I. du Pont de Nemours & Co., Wilmington 98, Delaware.

BOOKLETS

T-609 **PROCESSING NYLON STAPLE.** Data sheet describes method of processing Du Pont 42 Nylon Staple in blends with cotton. Covers complete operation through sizing. Bulletin N-93, E. I. du Pont de Nemours & Co., Inc. Wilmington, Del.

laboratory

T-701 **TESTING INSTRUMENTS.** Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearny, N. J.

T-703 **SHADOGRAPH WEIGHING DEVICES.** Pictures and information on various types of scales. Exact Weight Scale Co., Columbus 8, Ohio.

T-705 **STROBOTAC.** Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., West Concord, Mass.

T-706 **YARN COUNT SCALE.** Data sheet tells how direct-reading instrument provides fast, accurate method of determining yarn number. Exact Weight Scale Co., Columbus 8, Ohio.

T-712 **AUTOMATIC MOISTURE CONTROL.** Booklet tells how Hunter Electro-Psychrometers are used in measuring percentage of moisture in all classes of textiles, whether yarns or fabrics. Hunter Controls, Inc., Div., James Hunter Machine Co., North Adams, Mass.

services for management

T-801 **FACTORING SERVICE.** Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

T-805 **PROFIT THROUGH FACTORING.** Brochure gives facts on the use of factoring as a modern plan for developing sound business growth and added profits. Walter E. Heller & Co., Dept. TI-2, 105 W. Adams St., Chicago 99, Ill.

T-807 **GROUP INSURANCE.** Information on how textile group insurance can insure the happiness of your employees and make for a better running mill. Provident Life and Accident Insurance Co., Group Dept., Chattanooga, Tenn.

T-808 **FACTORING.** Complete details on services offered as mill factors. L. F. Dommerich, 271 Madison Ave., New York, N. Y.

T-810 **THE WONALANCET WAY** is the title of an editorial booklet published five times a year dealing with current problems. Write Wonalancet Company, 128 Burke St., Nashua, N. H.

T-812 **BEECHCRAFTS FOR 1961.** Brochures available from Southern Airways Company shows how Beechcraft executive airplanes can save executives time and money. Write Southern Airways Co., P. O. Box 718, Atlanta, Ga.

T-819 **ORGANIZED LUBRICATION PAYS.** Planning book entitled "Management Practices that Control Costs via Organized Lubrication" shows how to effect savings in five areas of plant operation. Available from Texaco, Inc., 135 E. 42nd St., New York 17, N. Y.

T-821 **INVENTORY CONTROL.** How a daily report of inventory condition mechanically producted on existing business machines showed a net direct payroll saving of more than 10,000 a year. Administrative Methods Dept., Werner Textile Consultants, 1430 Broadway, New York, N. Y.

plant operation

T-902 **BELT LACING EQUIPMENT** Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

T-903 **"MOTOR SELECTOR."** How to select a-c motors for specific application. Bulletin B-2103. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

T-904 **GEARMOTORS, MOTORGEARS, AND FLUID DRIVES.** Catalog supplies complete information on double, triple, and quardruple reduction gearmotors and motorgears. Electrofluid and fluid drives are also explained. Link-Belt Company, Dept. PR, Prudential Plaza, Chicago 1, Illinois.

T-907 **WRAP UP LINT PROBLEMS.** Automatic lint filter removes lint from air, winds it into disposable roll. Bulletin 234, American Air Filter Co., 275 Central Ave., Louisville 8, Ky.

T-908 **TEXTILE MOTORS.** Bulletin describes compete line of textile motors. Diehl Mfg. Co., Finderne Plant, Somerville, N. J.

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PERSONAL NOTES

(from page 20)

to assistant superintendent of weaving, night shift, at the Trion, Ga., division of Riegel Textile Corp. **Henry Bishop** has been named to assistant superintendent of preparation, night shift.

J. Alden Miller, secretary of Louisville Textiles, Inc., has retired. **Owen L. Burress** has been named to succeed Mr. Miller.

Howard Shapiro has joined Waumbec Mills as director of fabric and product development.

Forrest Drum has been named vice-president of operations of the Betterwear Hosiery Mill, Inc., Catawba, N. C.

Robert D. Bickford has been named to head development work for Caron Spinning Co.

C. Clyde Williams, general manager of the Boaz and Guntersville, Ala., plants of Boaz Spinning Mills, and **Loy H. Allen,** manager of the Guntersville plant, have resigned.

Mr. Stewart

Mr. Harris

Mr. Rich

Dr. Herrnstadt

James E. Grogan has been named assistant personnel director of Union Bleachery, a division of Cone Mills Corp.

Seabury Stanton, president of Berkshire Hathaway, Inc., and **William F. Sullivan** have been re-elected to their posts of chairman and president respectively of the Northern Textile Association. **William H. Hubbard,** vice-president and treasurer of William Skinner & Sons, and **Roger M. Grimwade,** treasurer of Charlton Woolen Co., were named vice-presidents to serve for one year.

George A. Dorr, Jr., president of Dorr Woolen Co., has been elected chairman of the wool manufacturers council of the Northern Textile Association.

Frank B. Stewart has assumed duties as overseer of weaving at the Unity plant of Callaway Mills Co. **Franklin Foss,** quality control supervisor at the Milstead plant, has been transferred to the Unity plant in the same capacity. * * * **John D. Harris,** plant manager of the Manchester plant since 1944, has retired. **Charles E. Rich** has been named plant manager succeeding Mr. Harris. * * * **Dr. Gerald E. Herrnstadt** has joined the company as chief product development engineer.

George H. Johnson, director of textiles for the American Institute of Laundering, has retired.

DeWitt C. Morrill has been appointed to the newly created post of director of public relations for Indian Head Mills, Inc. Mr. Morrill will be responsible for all phases of the company's public relations program.

Professor **J. W. McCarty** of the A. French Textile School has returned to Georgia Tech after a year's leave of absence. Professor McCarty spent the year in Korea under the auspices of the University of Minnesota aiding in the rehabilitation of the laboratories and the upgrading of the curricula of the Engineering College of Seoul National University. Professor McCarty spent most of his time in Korea designing and laying-out new textile laboratories and ordering and installing American textile machinery. Slightly over a quarter million dollars worth of equipment was purchased for the Textile School.

The National Institute of Drycleaning has announced the appointment of Dr. [illegible] Y. Jennings of North Carolina [illegible] College, to the NID textile advi[illegible] committee. Dr. Jennings succeeds Charles A. Seibert who has resigned. Dr. Jennings is professor of textile research at

make a note of this name

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North Carolina State College School of Textiles. He was formerly director of research for Dan River Mills.

Paul Bowie, formerly superintendent, has been named manager of the Liberty plants of Woodside Mills. **Harold Brissey** has been named to succeed Mr. Bowie as superintendent.

Leon Cauchon, formerly personnel manager of the Merchants branch of Dominion Textile Co., Ltd., has accepted a like position at the Drummondville, Quebec, division.

Jacques Staelen has been named to the position of treasurer and general manager of Masurel Mills, Inc., Woonsocket, R. I., succeeding **Robert E. Boyavel,** who has resigned.

Donald C. Grimes has been named plant manager of the Tifton, Ga., plant of Peerless Woolen Mills, a division of Burlington Industries, Inc. Mr. Grimes replaced **Stephen O. Addison,** who has been on temporary assignment from the Rossville, Ga., division.

Julius W. Abernethy has resigned his post as president of Carolina Mills, Inc. **O. Leonard Moretz,** secretary-treasurer and general manager, has been named to succeed Mr. Abernethy, and will also continue as treasurer of the firm. **Jack L. Thompson** has been elected secretary.

S. J. Craig, Jr., has assumed duties as manager of the Rutherfordton, N. C., plant of Excelsior Mills, Inc., succeeding **C. E. Anderson,** who has resigned to accept a position with Lockhart Mills.

Alexander Smith has been appointed director of testing at the pilot plant of Hatch Mill Corp., Rutherfordton, N. C. Mr. Smith was formerly associated with Deering, Milliken and Co. * * * At the Columbus, N. C., plant, **William T. Eisen** has been named production superintendent succeeding **William H. Stallworth,** who will assist in the establishment of a blending unit at Spartanburg, S. C.

A. B. Crews has been named president of Morpul, Inc., succeeding **Cecil Crawford,** who has resigned to devote time to research and development activities for the firm.

A. W. Gunn, former vice-president, secretary and treasurer of Callaway Mills Co., has accepted the position of vice-president in charge of financing and other related duties of Abney Mills. **Charles R. Walters,** a vice-president and director of the firm, has resigned.

New officers elected at the recent meeting of the Carded Yarn Association are (l to r): **L. E. Bowen,** Tifton Cotton Mills, immediate past president; **O. Leonard Moretz,** Carolina Mills, Inc., president; **W. R. Austin,** Avondale Mills, first vice-president; **B. D. Banks,** Habersham Mills, second vice-president; **E. Owen Fitzsimmons,** executive vice-president, secretary-treasurer for the 25th year.

Pictured at the recent meeting of the North Carolina Textile Manufacturers Association are newly-elected officers: **Donald R. Jonas,** vice-president of Johnston Mills Co., (left foreground) accepts presidential gavel from retiring president, **J. C. Cowan, Jr.** Second row, (left to right): first vice-president—**D. R. LaFar, Jr.,** LaFar Mills; second vice-president—**Hal A. Little,** Little Mfg. Co.; executive vice-president & secretary & treasurer—**Thos. N. Ingram;** president of North Carolina Textile Foundation—**William H. Barnhardt,** Southern Webbing Co.

Jules Witten has been elected president of American & Efird Thread Co., a division of American & Efird Mills, Inc.

Roger Greene, personnel assistant and editor of the "Atco Bulletin" for the American Thread Co., Inc., has been transferred to the New York offices to assist the director of public relations. * * * **Marion A. Bulman** has joined the company as assistant purchasing agent for the southern mills.

The new $775,000 science building of Wofford College has been named Milliken Science Hall in honor of **Roger Milliken,** president of Drayton Mills.

Elbert T. Landreth has been appointed weaving technician for Judson Mills, a division of Cotwool Mfg. Corp. **Charles G. Johnson,** formerly personnel director, has been named staff personnel director.

John A. Lunn, vice-president and director of manufacturing of The Kendall Co., has retired.

Bradford Champion has joined the staff of the Vulcan Rubber Products division of Reeves Brothers, Inc. Mr. Champion's primary assignment will be the development of products and applications for the new lines of plastic coated and treated fabrics.

OBITUARIES

Roger McCallum, 60, personnel director of Lyman Printing and Finishing Co., Lyman, S. C.

Johnston McCorkle, 63, superintendent and a director of Harmony Grove Mills, Inc., Commerce, Ga.

W. Norman Perry, Jr., 51, owner and president of Fergus Perry Co., Philadelphia, Pa.

Aaron Botvinick, 57, owner of Columbia Knitting Mill, Hazelton, Pa.

Nathan R. Burg, 56, founder and partner of the Triangle Knitting Mills, Philadelphia, Pa.

Harry Lester Riel, 57, general overseer of carding and spinning for The Goodyear Tire & Rubber Co., Cedartown, Ga.

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MILL NOTES

Ames Textile Corp. has announced plans to expand operations of the recently acquired I. A. Wyner & Co. Ames woolen lines will be coordinated with Wyner's knitted fabrics, and expansion of the Wyner lines to put greater emphasis on cottons, synthetics, and novelty fabrics. The latter firm will be operated as a wholly-owned subsidiary of the parent firm.

Oehrle, Inc., has moved into new quarters at 141 E. Hunting Park Ave., Philadelphia, Pa. The new facility contains 31,000 sq ft of floor space.

The "honor award" was recently presented to the employees of the Vulcan plant of **Reeves Brothers, Inc.** The award is made to firms or plants which have recorded three million man-hours without lost-time accidents.

A certificate of incorporation has been issued to **Thomas Henshall Silk Finishing Co., Inc.,** in Paterson, N. J. Incorporators are Clara R. Nieskens, Le Roy J. Van der Wende, and Kenneth Englishman.

Hanes Hosiery Mills Co. recently dedicated its new multi-million dollar Weeks division plant. The new facility now employs 500 persons and is producing seamless hosiery at the rate of 800,000 dozen pairs a year.

The board of directors of Trans-United Industries, Inc., which operates the **Artloom Carpet Co.,** has elected Jack T. Blume president and chief executive officer.

The central purchasing office of **Collins & Aikman Corp.** has been transferred as one operation to the new staff building attached to the Albemarle, N. C., plant. The purchasing department of the Bangor tricot division will remain in New York City.

Twenty employees of the Columbus, Georgia, plant of the **Bibb Manufacturing Company** were honored at a dinner recently in recognition of having completed all requirements for diplomas in the textile vocational education program. This is the largest group to earn diplomas at one time at any plant in the State.

Fifteen of the men received diplomas in supervision, representing an average of eighty hours of off-duty-time study per year for four years in such subjects as safety, material waste control, work simplification, time study, cost control, job evaluation, wage incentives, human working relations, employee instruction, and conference leading.

Four men received diplomas in spinning and one man in carding, each diploma representing from three to four years' off-duty study in the mathematics, technology, and machine adjustment involved in these processes.

The diplomas were awarded by Thos. H. Quigley, director of industrial education, Georgia Institute of Technology, who has directed the vocational textile program in Georgia since its inception.

The Franklin Process division of **Indian Head Mills, Inc.,** has begun a major expansion and improvement program for its southern yarn spinning and dyeing plants. The Greenville, S. C., plant expansion is nearing completion and an addition is planned for the Fingerville, S. C., plant. Additional stainless steel dyeing machines with automatic controls and hot water and heat reclamation facilities are planned for the Greenville and Chattanooga plants. The improvements will replace the production of the Philadelphia, Pa., plant, which is to be closed within the next few months.

An addition to the present facility of the Butte knitting division of

Jonathan Logan, Inc., is under construction. The new facility will house additional German knitting machines which will increase production by 22,000 yards of double knit fabrics.

The Nova Scotia plant of United Elastic Corp., **United Elastic, Ltd.,** has begun operations. The new unit will produce woven narrow elastic, wide power net fabric for foundation garments, and rachel knit all-cotton thermal underwear. Harry L. Thompson is manager.

The expansion program at **Noxon Rug Mills, Inc.,** is nearing completion. A new brick building has been added which will increase manufacturing space to about 25,000 sq ft. Tufting equipment is being installed to enable the firm to offer 12- and 15-ft widths of carpet in a variety of patterns and fiber combinations.

American Carpet Mills, Inc., has moved its Dalton, Ga., operations to the new $2 million plant at Cartersville, Ga. Tentative plans call for the employment of 200 persons.

A brick and steel building is being constructed at **Hazlehurst (Ga.) Mills,** a division of the Patchogue-Plymouth Corp., which will increase the plant size by approximately 35,000 sq ft. The facility will be used for manufacturing double backing for carpets and carpet yarn, and for warehousing.

The Liberty plant of **Woodside Mills** recently completed one million man-hours without an industrial accident, the fourth time the plant has achieved this record.

A new firm, **Broad River Printing & Finishing Co.,** near Gaffney, S. C., has completed engineering work on a $5 million plant. Construction of the 354,000 sq ft facility is scheduled in the very near future.

Plymouth Printing Co. has relocated its operations in two buildings at 206 Globe Mills Ave., Fall River, Mass. The new quarters will afford 60,000 sq ft of operating space.

Belding Heminway Co., Inc., and **Lily Mills Co.,** both located in Shelby, N. C., have merged. The latter firm will continue its operations and will be operated as a wholly owned subsidiary of the parent firm. No change in name or management is anticipated.

Berry Hosiery Co., Durham, N. C., has announced the purchase of 36 wrap reverse 120-needle machines and eight loopers.

Two daily tours of the plant have been initiated by the White Oak plant of **Cone Mills Corp.** Visitors are shown through the plant beginning in the opening room and follow the process to the baling of the finished product.

The expansion and improvement program at the Duke Finishing division of the **Kayser-Roth Hosiery Co.** has been completed. The plant now contains 54,000 sq ft of manufacturing space and 7,000 sq ft for storage and warehousing.

A new chemical research pilot plant is being constructed at the **Deering Milliken** research center in Spartanburg, S. C. The $60,000 addition is nearing completion.

Westbury Knitting Co. has announced the purchase of the former Spatex mill in Charlotte, N. C. The sweater knitting operation will utilize the second and third floors of the facility and the first floor will be leased. Production will begin in early 1961.

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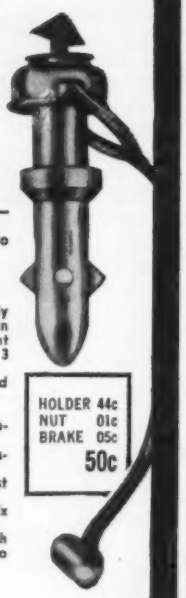

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SUPPLIER NOTES

E. Grady Sinclair, Jr., has been named southern district manager for the **L. H. Shingle Co.** * * * The firm has announced affiliation with Rockwell Mechanical Packing Co. The affiliation adds a new line of moulded synthetic mechanical packing for the former firm which includes Neo-fab (Neoprene) fabric and Neoprene molded cup, U's, flanges, Vee's, and other shapes.

The mergers of **Fairtex Corp.** and **Branson Yarn Co.** into **Riegel Paper Corp.** has been announced by the presidents of the respective firms.

William K. Walker has been named agent for **Nilfisk of America** in western North Carolina. Mr. Walker will make his headquarters in Asheville. H. V. Murdaugh has been named to represent the company in eastern South Carolina and will headquarter in Orangeburg. * * * John Perkins Industries and Solar & Co., Inc., have been appointed western South Carolina and New England distributors respectively.

Hayes Textiles, Inc., has been named exclusive sales representatives to the manufacturing and finishing plants for the southern territory for **Manton-Gaulin Mfg. Co., Inc.**

Judd J. Mohl has been elected vice-president of **James Talcott, Inc.,** in charge of the New England region.

John P. Stilwell has joined the Charlotte, N. C., sales office of **The Dobeckmun Co.**

Edwin M. Irish has been named manager of sales for **AviSun Corp.** Dr. E. T. Severs has been appointed manager of market development. Mr. Irish will direct sales of both polymer and film and Dr. Severs will direct a market development program for polymer, film, and polypropylene fibers.

Robert D. Brassil, technical service representative for **Food Machinery and Chemical Corp.,** has moved his headquarters to Charlotte, N. C.

Globe Woven Belting Co., Inc., and Walters Belting Industries, Inc., have appointed **Louis P. Batson Co.** as sole selling agent for endless woven belts for the textile trade.

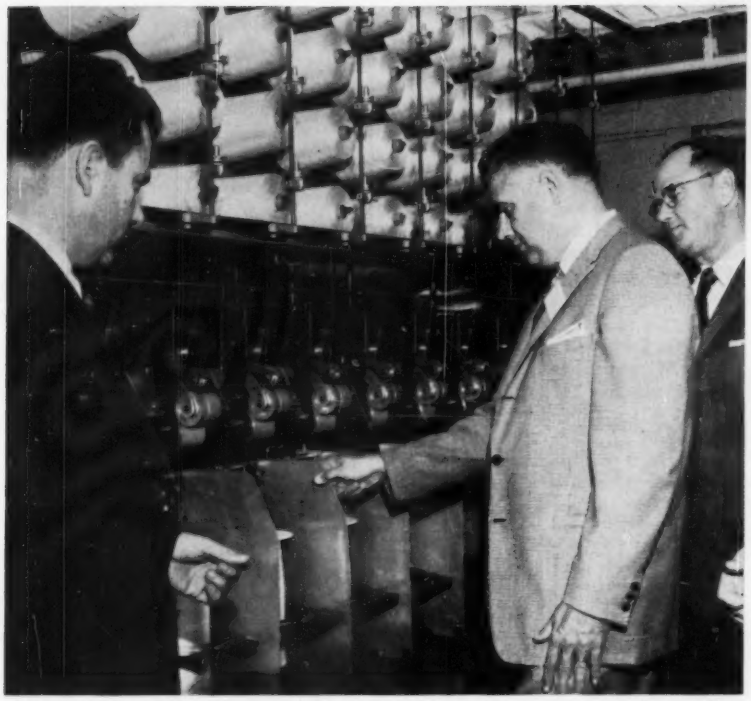
Frank H. Kaufmann, vice-president of **Steel Heddle Mfg. Co.,** and manager of the Philadelphia plant, has been appointed general chairman of the Philadelphia Textile Institute's corporate giving program for the 1960-61 campaign.

Southern Machinery Co. is currently expanding its plant and operations preparatory to beginning production of a new automatic spinning frame filling builder, designated the "Build-O-Matic." * * * The firm has announced acquisition of **Continental Industries.** The latter firm will be operated as a wholly-owned subsidiary of the parent firm.

An expansion program which will approximately double facilities at the Syracuse, N. Y., research-technical service laboratory of the Solvay Process Division of **Allied Chemical Corp.** has been announced. Completion is anticipated in late 1961. * * * Helen D. Vincent has been appointed stylist for fabrics made from Caprolan nylon. Miss Vincent will work with mill stylists and other designers interested in the development program.

Israel, through its Ministry of Commerce and Industry, has retained **Werner Textile Consultants** to resolve industrial production problems and to furnish technical advice on methods of marketing organization and relevant aspects of production, management, productivity, and applied research for the textile industry of that country.

Birch Brothers, Inc., has announced acquisition of the patents and all rights to manufacture and sell the



Utex, Inc., recently held an open house to introduce their new yarn processing machines to the trade. Looking at the prototype of a heavy duty ring twister (details on page 59), are (left to right): Anthony Lema, Utex sales manager; A. W. Thomas, Jr., president of U. S. Textile Machine Co.; and William Russell, Utex southern sales manager.

automatic tacking aligner from the Bachmann Uxbridge Worsted Co., division of Hoosac Mills Corp. Parts and service facilities for the aligner will be maintained by Birch Brothers.

James S. Wilson, formerly of the No. 1 Plant of Rex Mills, Inc., Ranlo, N. C., is now sales manager of **Southern Reneedling Works, Inc.**

The Los Angeles office of **Jacques Wolf & Co.**, a subsidiary of Nopco Chemical Co., has been moved to 4858 Valley Blvd.

W. A. Norman has been promoted to the position of manager of Acrilan technical sales service for **The Chemstrand Corp.** * * * Robert S. Godfrey has assumed new duties as a technical sales service representative. * * * Robert E. Smith has been named general manager of marketing. * * * Lamar Beach has been appointed manager of the district sales office at Charlotte, N. C. * * * Rudolph J. Wojtowicz has been transferred to the New York sales office. * * * M. R. Dalton has been promoted to executive director of Acrilan.

James N. McDonald has been named sales manager of **American Cyanamid Company's** fibers division.

Robert J. Overcash has joined the staff of **Schmidt Mfg. Co.** Mr. Overcash will be in charge of sales in North Carolina and Virginia.

William C. Brewer has been named to supervise advertising and sales promotion activities for **Hyster Company's** industrial truck division.

Charles F. Schroeder has been appointed general sales manager for the Curon division of **Reeves Brothers, Inc.** * * * Plans have been announced for two additional plants, one on the West Coast and one in the northwestern area of Georgia.

Robert E. Attig recently joined the sales department of **Shawinigan Resins Corp.** as a trainee.

Union Special Machine Co. has announced the appointment of Merritt M. Ambrose as an assistant manager of the Atlanta, Ga., district. * * * William T. Haywood has been named a junior representative with headquarters in Tupelo, Miss.

Warren Harrington has been appointed technical sales representa-

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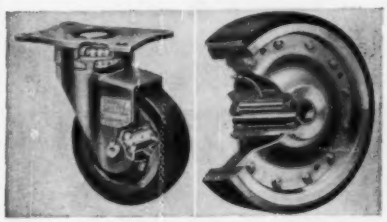

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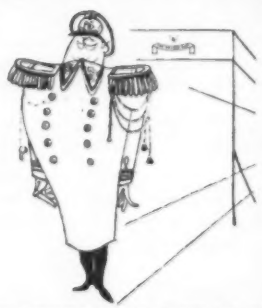

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SUPPLIER NOTES

(from page 167)

tive in North and South Carolina for **Emkay Chemical Co.** Thomas J. McDonald has been promoted to sales manager for the New England area. David L. Armitt has been named to the sales staff of the industrial division. Joseph Goodman has joined the laboratory and plant as a sales trainee.

Roberts Company has announced receipt of an order from Springs Cotton Mills for 34 Roberts Arrow M-1 cotton spinning frames totaling about 12,000 spindles to be installed in the White plant addition at Fort Mill, S. C. The firm recently produced its 1,000th spinning frame.

Charles E. Zahos has been appointed a field sales and service representative in North and South Carolina for **Markem Machine Co.** Charles H. Cheeseman is now serving the trade in Florida, southern Alabama, and southern Georgia.

Singer-Fidelity, Inc., subsidiary of The Singer Manufacturing Co., has announced an expansion program which calls for an additional building at K St., and Erie Ave., Philadelphia, Pa. The new facility will increase manufacturing capabilities 40 per cent.

W. Frank Lowell has been elected president of **Saco-Lowell Shops.** Mr. Lowell has been a director of the company since 1935.

Owens-Corning Fiberglas Corp. has announced the completion of the multi-million-dollar technical research center in Granville, Ohio.

Continuous Fiberglas textile strands are being twisted prior to being made into experimental yarn in **Owens-Corning** mechanical research laboratory.

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Mr. Kritzer
Mr. Lenz
Morningstar-Paisley

Mr. Kelly
Fletcher

Mr. De Loach
Seydel-Woolley

Mr. Cranshaw
Dixon

Mr. Southworth
Draper

Production of a complete line of industrial adhesives has begun at the new **Morningstar-Paisley, Inc.,** plant in Atlanta, Ga. The new facility will also serve as a warehousing and service facility for other products manufactured by the firm. Lee Kritzer has been appointed regional manager and Milton F. Lenz has been named production manager.

J. Clyde Kelly has been named to the newly created post of southern sales manager for **Fletcher Industries.** Mr. Kelly will be headquartered in Southern Pines, N. C.

Francis B. De Loach, formerly technical sales representative in the South Carolina territory, has been promoted to assistant sales manager of **Seydel-Woolley & Co.**

Edward Cranshaw has been appointed sales manager of spinning drafting changeovers for the **Dixon Corp.**

A. J. Lyon has assumed new responsibilities as technical representative in the Charlotte, N. C., district for **Union Carbide Chemicals Co.** F. N. Wright has been transferred to the Charlotte district sales office.

Clifford B. Yager has been appointed general promotion manager for the Sanforized division of **Cluett, Peabody & Co., Inc.** Harry E. McCann, formerly assistant sales manager, has succeeded Mr. Yager as market development manager.

Tentering and drying machines manufactured by Kurt Bruckner of Germany are now available in the U. S. through their American outlet, **Bruckner Machinery Corp.,** P. O. Box 56, Cedar Grove, N. J. Henry Feustel is in charge.

Henry L. Ford has been elected president of **Eastman Chemical Products, Inc.,** a subsidiary of Eastman Kodak Co. J. Wilson Malloy, Jr., has been named an assistant sales manager for the Kodel fiber sales group, and George W. Snyder has been appointed assistant sales manager for filter products. John C. McNamee has assumed duties as a fibers sales representative in the New York office. * * * The second phase in the multi-million-dollar construction program for production of Kodel has been started at the Tennessee Eastman division.

Wright Machinery Co., a division of Sperry Rand Corp., has appointed **Gunter & Cooke, Inc.,** as special representative for the Nepotometer, an instrument for predicting the potential of cotton fibers to form neps.

Paramount Textile Machinery Co. will soon begin marketing the six-drawer tray dryer for ladies' hosiery which was formerly available from Cook Engineering and Electronics Co.

Moretex Chemical Products, Inc., has acquired license from W. R. Grace & Co. to produce and market two hydrazinium compounds for use in textile wet processing.

Rodney C. Southworth has been appointed acting director of research for **Draper Corp.,** succeeding the late Frederick M. FitzGerald. Mr. Southworth will continue as head of the patent department.

The **James Hunter Machine Co.** has announced the opening of a garnett reclothing shop in Mauldin, S. C. Specialists in garnett installation, operation, and maintenance are available at the facility which is under management of Hunter's southern subsidiary, **James Hunter, Inc.**

The Baxter Corp. is exclusive U. S. agent for the Texap Electric Jacquard which is manufactured in Switzerland by Textile Apparatus Factory, Ltd.

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See page 153

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